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The Transvaal affair continues to move very slowly, and reports vary from day to day. Both Great Britain and the South African Republic are making preparations for war, though negotiations are by no means suspended, and a new conference is proposed. Meantime the gold production continues very large, as the July returns show; and there are plenty of plans for the extension of operations in the mines. All this looks as if the moneyed interests in the country, which would be so seriously affected by war, believed in a peaceful settlement of the present difficulties, however much it may be delayed.

Among the minor mineral products which have been attracting attention recently, mica seems to hold a prominent place. This is largely due to the increased demand, due to its use as an insulating material for electric work. We are in receipt of inquiries from all parts of the country as to the uses and value of mica; and these show that prospectors are on the lookout for the mineral and have large ideas of its value. There certainly is a demand for mica which is in excess of the home production, as is shown by the considerable quantities imported, and a market could be found for an increased output. It is a mineral which can be found in many places, but unfortunately the deposits of commercial value are very few. The quality regulates the price entirely, and mica which comes up to the requirements of freedom from flaws, evenness of structure and, above all, size of sheets or blocks, is comparatively rare. Prospectors should bear this in mind and not be carried away by indications, which are apt to be very deceptive. It is also to be remembered that in mica mining there is always a very large proportion of dead work and waste material, so that only high grade deposits can be made to pay.

The extraordinary demand for iron and iron ore has led to a revival of interest in the iron mines in the East, which have been rather neglected in recent years. Our news columns have lately recorded the reopening of several old mines in New Jersey and Eastern Pennsylvania, and the extension of operations at others. The latest sources of iron ore supply to attract attention are the mines along the western shore of Lake Champlain. Negotiations are pending for the transfer of the old mines near Port Henry, New York, and the Port Henry blast furnaces, with a probability that they will be carried through. In that case work will be resumed at both mines and furnace as soon as they can be made ready. The Crown Point furnaces and the mines in their neighborhood are also being examined with a view to starting them up again. In the case of the furnaces referred to, the drawback is, of course, the cost of fuel. It is possible to ship the ores more cheaply than to carry the fuel to it; but in the present state of demand and prices, this may be outweighed by the advantage of having furnaces which are in condition to go into blast with only moderate repairs and in a short time. The furnaces named, running on local ores, can make either foundry or basic pig, as may be required.

We have been accustomed to consider the United States as the leader in the applications of electricity to practical work; and this has been especially the case in transportation. The construction of electric railroads in towns and cities, and more recently for suburban and other long-distance traffic, has been carried out on a greater scale than in any other country. Recently, however, Germany has taken up the building of electric railroads on an extensive scale, and the use of the electric motor on what are called in Europe "secondary railroads"—that is, railroads for local traffic—promises to be adopted on a more extensive scale than even in this country. The number of projected lines is large, and a fair proportion of them are so far advanced that contracts have been let, or are to be let soon; while some lines of importance are in operation or nearly ready to start. In Switzerland also the work of building mountain and other roads with electricity for motive power is going on actively. In Great Britain electric railroad work is fairly active, though less so than in Germany.

Naturally all this electric work has an influence on the demand for copper, though this will be more apparent next year than it is at present. Many of the recent German contracts will not be filled until some time in 1900, or even the next year; so that there will be time enough to secure the necessary supplies.

About a year ago the United States Circuit Court in Pittsburg gave a decision in a suit brought by the Carnegie Steel Company against the Cambria Iron Company for infringement claimed by the plaintiff of the patent of William R. Jones, covering the use of a mixer or reservoir of molten metal in making steel by the Bessemer process. This decision upheld the validity of the Jones patent and also held that the process used at the Cambria works was an infringement of that patent, although it was not in all points identical with that of the Carnegie Company. The main point was that the patent, as interpreted by the court, covered the use of the mixer, a device which is essential in the

continuous process of making steel which is now employed in many large works, and which is also used in many cases where the pig iron is remelted before going to the converters. In the continuous process it will be remembered the molten metal from the blast furnace goes to the converters in a liquid state, and is made into steel at a single operation, with great economy in time and fuel. The mixer is used not only to insure a continuous supply of raw metal for the converters, but also to enable the operator to regulate the quality of the iron, as the metal from several furnaces can be conveyed into the mixer, which in fact derives its name from this use. The device was described and the patent specifications given in the "Engineering and Mining Journal" for October 1st, 1898, and the decision above referred to was commented on in our issue of September 10th, 1898. Subsequently the Circuit Court allowed an appeal to the defendants, and this appeal was recently tried in the United States Circuit Court of Appeals in Philadelphia. Last week the opinion of that court was rendered by Judge Kirkpatrick. This new decision dismisses the bill brought by the Carnegie Steel Company as owner of the Jones patent, and holds that the patent cannot be enforced, as the invention claimed was really anticipated by previous inventors. This decision appears to support the contention made on the first trial of the case, that the mixer was contained or described in the English patent of Deighton, issued in 1873. As will be readily understood from what has been said above, the decision is one of much importance to the steel trade, as it will permit the use of the mixer without the necessity of securing licenses from the Carnegie Company.

NEW MINERAL PRODUCTS IN THE UNITED STATES.

A noteworthy feature in the statistics of mineral production in the United States in 1897 and 1898, which were published in our issue of July 29th, was the presence in the list of several products which appeared for the first time in 1898. None of them was important in point of aggregate value, but certain of them promise to be of importance in the future. The new substances in the list were molybdemite and wulfenite, two ores of molybdenum, metallic molybdenum and ferro-molydenum, tungsten and metallic manganese, all of which are used in steel making, lithographic stone, zinc sulphate; artificial graphite was reported for the first time, although some was made in 1897, and this was also the case with tungsten ore. Ferrotungsten is made in the United States by three concerns, but no statistics as to this alloy were available. There were also two new industries in 1898, concerning which figures could not be obtained, there being but one producer in each, whose operations were not fairly in progress up to the end of the year. These were tin, recovered from tin-plate scrap and sulphurous acid, both of which industries have been established in New Jersey. Another respect in which our statistics understate the magnitude of American metallurgical industry was in the omission of platinum from the table of metals of foreign origin refined in the United States. Most of the platinum used in this country now is imported in crude form and refined here, four or five works being engaged in this business. It was through inability, not oversight, that this industry was not reported statistically, which we hope to be able to do next year.

With respect to the new substances in 1898, we judge that artificial graphite, sulphurous acid, recovery of tin from tin-plate, and manufacture of zinc sulphate have the best chances to grow. So far as we can look ahead, the demand for molybdenum will not be large, and tungsten does not promise to become a metal of such usefulness as nickel, although the demand for it is increasing. As to lithographic stone, there was a time when a good quarry of this material would have been an exceedingly valuable property, very likely it would be still, but the stone is now less important, since aluminum plates have been substituted successfully for it, than when Bavaria was the sole source of the world's supply. Lithographic stone is by no means a new discovery in the United States, quarries of it having been opened in Arizona, South Dakota and perhaps elsewhere, but apparently the stone was either not good enough or the cost of production too high, since there is no record of any but experimental shipments previous to 1898.

The single producer of zinc sulphate in 1898 was the Consolidated Kansas City Smelting and Refining Company, which at its Argentine, Kan., works, recovered as a by-product the amount reported. So far as known to us, Germany is the only other country which produces zinc sulphate, it being obtained there in the lower Harz in the treatment of the mixed sulphide ores of the Rammelsberg, and on a smaller scale at certain other works by leaching zinky flue dust with sulphuric acid. Unfortunately the market for zinc sulphate is not very large; in Germany from 4,000 to 5,000 tons per annum are made. It is used chiefly in the manufacture of lithophone by mixing solutions of zinc sulphate and barium sulphide, whereby zinc sulphide and barium sulphate are precipitated. The product is a pigment which is better than ordinary barytes, and if not so good, at least cheaper than zinc white. Possibly the United States imports a good deal of lithophone from Germany. Possibly the zinc sulphate made at Argentine, in conjunction with barytes of Southeastern Missouri, might be used for its manufacture in this country.

LITHIUM MINERALS AND THEIR UTILIZATION.

Probably it is not generally known to manufacturing chemists in the United States that this country has vast resources in lithium mineral, which have never been exploited. Lithium is classed as one of the rare elements, and is indeed rare in its metallic form, but its compounds are not rare in occurrence or in commerce. We do not know what their usefulness might be if their supply were large and cheap, but at present the use of lithium salts, especially the carbonate, is chiefly in the preparation of lithia water, which is used extensively for medicinal purposes in such diseases as rheumatism, due largely to an excess of uric acid in the system. There are some natural lithia waters, but a good deal of what is sold as such are artificial. The consumption of lithium carbonate for this purpose in the United States is variously estimated at from 40,000 to 200,000 pounds per annum, all of which is obtained from Germany. The average value of the salt at New York in 1898 was $4.22 per pound. Consequently it is evident that there is a good business in sight for some one who will undertake its manufacture in this country, although it should not be expected that the price would keep up if the supply were increased largely.

The commonest lithium minerals are spodumene and lepidolite, the latter known also as lithia mica, though it seldom occurs in large flakes with which the idea of mica is commonly associated, but rather as an aggregate of minute scales, which, examined casually, resemble a pinkish white micaceous sandstone. It is a complex silicate of potassium, lithium and aluminum together with aluminum fluoride; its tenor in lithia, Li_2O, ranges, according to Dana, from 3.87 to 5.88 per cent. Spodumene is a simple silicate of lithium and aluminum, containing theoretically 8.4 per cent. Li_2O, but owing to impurities usually only 4.49 to 7.62 per cent. It was produced commercially in the United States in 1898 in the Black Hills, whence 500 pounds were shipped, and in Massachusetts, where several tons were obtained. The occurrence of spodumene, however, is insignificant in comparison with the vast deposit of lepidolite which exists in California. Ths deposit, which is that whence the beautiful specimens of rubellite crystals imbedded in lepidolite, that are to be seen in every mineralogical collection, are obtained, was discovered in 1888. It is situated about a mile from the Pala Mission, on the San Luis del Rey River, in the northern part of San Diego County, in a hill of dark hornblende and feldspar diabase. About 300 ft. above the valley, on the east side of the hill, there is a pegmatite vein, underlying which is a bed of light-colored, fine-grained lepidolite, containing crystals of rubellite, which are often found in radiations. The developments already made are said to show a body of mineral which is estimated to contain 1,500,000 tons. The percentage of lithia ranges from 3 to 5 per cent. A recent analysis showed 49.5 per cent. silica, 1.1 per cent. manganese oxide, 27.9 per cent. alumina, 3.5 per cent. lithia, and 17.6 per cent. potash.

We have heard that the German manufacturers of lithium salts have made inquiries concerning this deposit with a view of keeping their control of the world's supply of the raw material and their monopoly in this business. We know that attempts have been made to interest New York chemical manufacturers in the matter, which failed in one case because of the report that the extraction of lithia from this ore would be too costly. But the decomposition of a lithium silicate would not appear to be a very difficult matter and the lithium once obtained in the form of the chloride, say, the preparation of the carbonate ought not to be much more difficult than the preparation of sodium carbonate from common salt. Anyway it would appear at first sight, in view of the considerable demand for lithia, its high price, and the large amount of mineral available, that it would be worth while for some chemist to study the problem.

THE PRODUCTION OF SILVER IN AUSTRALASIA.

In further elucidation of the statistics of the world's production of silver, published in these pages recently, we would say accurate statistics of the world's production of silver are much more difficult to compile than those for gold, partly because they are not so generally reported by the countries in which the ore is mined, and partly because the product is less frequently refined domestically and more extensively exported in the form of ore for smelting in other countries; on the other hand, the countries in which these ores and base bullions are refined, especially Germany, France, Belgium and Great Britain, are not uniform in their methods of reporting the outturn of refined metal, certain of them, as Germany reporting the total amount without discrimination as to origin, domestic or foreign, and others, as Great Britain, reporting only the product from domestic ores; in fact, the American statistics are the only ones which are thoroughly satisfactory in this respect. The most useful manner of reporting the

world's gold and silver production would be to specify in one table the total refined, according to countries where refined, and in another the total produced, according to countries where originating. Most reports of the silver output of the world are based on the latter principle, but while satisfactory with respect to many countries, they are inherently defective with respect to several (Germany, Spain, Bolivia, Peru and the seven colonies of Australasia), which happen to be large producers, Australasia being, indeed, surpassed only by the United States and Mexico.

The difficulty with the Australasian silver statistics is that New Zealand and Queensland are the only colonies which, in their official reports, state the production of that metal, and their production is comparatively insignificant. Fortunately, however, the New South Wales statisticians have been lately reporting more or less completely the production of the Broken Hill mines, which are by far the largest producers in Australasia, and those figures helped out by the official reports of some of the mining companies, enable us to arrive at what we believe to be a very close report of the production in the seven colonies. Our computations for the three years 1896-98 are as follows:

Production of Silver in Australasia in Troy Ounces Fine.

Colony.	1896.	1897.	1898.
New South Wales, Broken Hill Mines	19,592,943	14,703,736	14,725,000
New South Wales, elsewhere	250,000	250,000	250,000
New Zealand	94,307	181,160	295,256
Queensland	279,284	234,065	250,000
Tasmania, exported in Mt. Lyell copper	76,951	334,349	540,027
Tasmania, exported in other ores, chiefly silver-lead	1,091,300	1,373,938	1,119,400
Total	21,384,785	17,077,248	17,179,683

In the above table the statistics of the Broken Hill mines in 1896 are given as reported by the New South Wales Mines Department; those for 1897 are as reported by the same authority, plus a certain amount from the official report of the Broken Hill Proprietary Company, which had not been included in the Government report as specifically stated in the latter; the figures for 1898 are estimated on the basis of the gross value of the output in 1898 as compared with 1897, as officially reported each year. Outside of Broken Hill the silver production of New South Wales is entirely estimated, the only guide being scattered reports of various districts, given in the Government blue books. However, since the totals are comparatively small, the grand totals cannot be greatly vitiated by any inaccuracies in them. The Tasmanian statistics present another great difficulty, the Government reporting only the value of the silver-lead ore exports (which lately has been equivalent to the production). We obtain our statistics of Mt. Lyell copper contents in silver from the official reports of the Mt. Lyell Company. We estimate the contents of the silver lead ore exported on the bases of lead contents of the ore, as communicated by a high authority in Tasmania, the average value of the lead in the form of ore, and the average value of silver, allowing for the cost of refining. Although there are a good many uncertain factors in this method of procedure, it is the best available, and anyway the same system having been followed each year, the results are at least fairly comparable.

It is to be hoped that as soon as the plan of Australasian federation, now practically adopted, is put into effect (1900 is the date named), the statisticians of the united government will arrange to publish statistics of the silver production with the same promptness and accuracy as they do those for gold. We have no doubt they will, for we have great confidence in the enterprise of our co-workers in the Antipodes, together with a high appreciation of the valuable work which they have already done. It is the more necessary that they take up the work mentioned, however, inasmuch as the silver-lead and silver-copper industry in Australia is becoming more complicated in precisely the same manner as it did in the United States. New South Wales is now refining part of its silver-lead, exporting part, and exporting not only silver-lead ores, but also silver-zinc and silver-copper ores. Ores are being imported for smelting in New South Wales not only from the other Australian colonies, but also from New Caledonia, the latter promising to become a rich field for Australian enterprise. Tasmania, which once tried silver-lead smelting at home and gave it up, is now undertaking it again with better prospects of success. The combined effect of these industrial changes will be to complicate the movement of Australian silver ores, so that it will be an almost hopeless task for the foreign statistician to undertake to unravel it, and we must rely upon the efforts of those who are best in a position to obtain the necessary data.

NEW PUBLICATIONS.

"The Treasure State: Montana and Its Resources." Extra edition of the sixth annual report of the Bureau of Agriculture, Labor and Industry of the State of Montana. J. H. Calderhead, Commissioner. Helena, Mont.; Independent Publishing Co. Paper, 120 pages; with maps.

Montana is a great mining State. Its riches in copper, silver, gold, lead, iron and other minerals are known everywhere; but this report brings out resources in agriculture and other industries already prosperous and with a promising future, but which are not generally recognized. Montana, by the way, claims to produce the most wealth per capita of any State in the Union. The pamphlet is a good presentation of the resources of the State and their future possibilities.

BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

"The Wealth and Progress of New South Wales, 1897-98." By T. A. Coghlan. Sydney, N. S. W., Government Printer. Pages, 1084; with map.

"Commerce of Greece with Foreign Countries during the Year 1897." Prepared by the Bureau of Statistics of the Ministry of Finance. Athens, Greece; issued by the Ministry. Pages, 302.

"New South Wales Statistical Register for 1898 and Previous Years. Part VII., Manufactories and Works." T. A. Coghlan, government statistician. Sydney, N. S. W., Government Printer. Pamphlet. Pages, 31.

"Census of the Commonwealth of Massachusetts: 1895. Part 1, Volume VII.: Social Statistics and General Summaries." Prepared under the direction of Horace G. Wadlin, Chief of Bureau. Boston; State Printer. Pages, 114.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials will only be published when so requested.
Letter should be addressed to the MANAGING EDITOR.
We do not hold ourselves responsible for the opinions expressed by correspondents

Human Rays.

Sir: In answer to an article that appeared in the "Engineering and Mining Journal" June 24th last, from the pen of Ottokar Hofman, in which he claims he has discovered that the human body emits rays, which act upon and affect the sensitive photographic plate, he says that he prepared a plate to develop in the usual way, except that he did not have the usual lamp or light during the operation. While the plate was being developed he placed his fingers so that they nearly touched the film, for 10 minutes, when he put the plate in the "hypo." After it was fixed "it showed five distinct spots on the plate." Then he took a silver dollar, and while the plate was developing he placed the coin on the glass side of the plate and held his fingers on it for 10 minutes; he had the impression of the dollar.

All this is easily accounted for; had he taken a rubber tube and caused water at 98°, or the temperature of the body, to circulate through it, and held this in the place of his fingers, he would have had a shadow of the tube. The warmth from the water causes the film to soften and the chemicals to act more quickly, which darkens the film and causes the spots. This was also the case with the silver dollar; his hand warmed it enough in the 10 minutes to produce the effect. I have for a long time practiced the warming of a plate in the shadows, or when I wanted it strengthened—with my hand or otherwise—and secured the same results, the "body rays" having nothing to do with it. Other proof must be given, I think, before we are convinced that rays from the body affect the photographic plate. F. W. Swift.

Alden, N. Y., Aug. 28, 1899.

Assay of Iron in Lead Ores.

Sir: In "The Mineral Industy," Vol. VII., page 451, Dr. H. O. Hoffman, in his admirable resume of metallurgical progress, under the head of "Assay of Iron in Lead Ores," says:

"In regard to the restrictions made by Jones ("Mineral Industry," Vol. VI., p. 446, abstract of original paper Proceedings Colorado Scientific Society, February, 1899, on the titration of iron (in lead ores) with potassium permanganate in hydrochloric acid solution, it seems in place to call attention to the Zimmerman-Reinhart method, 'which gives accurate results even to the beginner.'" Then follows an abstract of the Zimmerman-Reinhardt method. The sentence I put in quotation is liable to get some of our younger chemists in trouble. My original paper was the result of an attempt to shorten the methods then in use, and if possible to adapt to the use of the western chemist some of the improvements made by the iron chemists. Among them the Zimmerman-Reinhardt method of titration was tried, and the result of the experiments will be found in the original paper (although not mentioned by name). The addition of phosphoric acid was tried, but as it only tends to reduce the strong yellow color of the solution, and has no effect on the actual titration, no mention was made of its use. The method as given by Dr. Hoffman cannot be used at all on probably 98 per cent. of the ore samples which are analyzed by the lead smelter chemists, for the following reasons:

1. The ore samples rarely contain 65 to 75 per cent. Fe, for which the Zimmerman-Reinhardt method is carefully calculated, and admirably adapted.

2. The ores almost invariably contain sulphides of lead, copper and iron (as pyrite), which would not be dissolved at all by the proposed method.

3. If the ore is first decomposed by nitric acid and evaporated to dryness, then treated by the Zimmerman-Reinhardt method, all the copper and antimony would go into solution with the iron, be reduced to cuprous and antimonious chlorides, and so interfere.

4. There would be a sufficient amount of nitric acid left in the residue as nitrate to cause interference.

Just exactly how it acts I am unable to explain; but it is a fact that all nitric acid must be eliminated before reduction by stannous chloride is attempted. Apparently some compound is formed which is oxidized by the volumetric solution, sometimes causing serious errors. A similar thing happens in solutions which are the result of alkaline fusions. I have tried to utilize the filtrate from a fusion for silica for the direct determination of iron by reduction with stannous chloride. The solu-

tion becomes yellow, and gives quite erroneous results. It is necessary, first, to precipitate the iron as ferric hydroxide by ammonia, filter, wash and redissolve before reduction. This increases the work and the time required very materially.

If the chemist dislikes the bichromate titration and is particularly attached to permanganate of potassium, I can strongly recommend reduction by granulated amalgamated zinc, as given at the end of my paper. I use the same kind of zinc as the iron chemists, granulated to 30 mesh. It need not be chemically pure. If this is amalgamated by the addition of about 5 c.c. metallic mercury to a pound of zinc, well shaken with a little dilute sulphuric acid until thoroughly and evenly amalgamated, the tendency to froth and boil over is much diminished.

The sulphuric acid solution of the iron (about 100 to 200 c.c.) is boiled for about five minutes with about 10 grams of this amalgamated zinc, when it will be found perfectly reduced. It can be quickly cooled; when all action ceases, the solution is well shaken with the zinc, decanted into a clean vessel, the granulated zinc washed three or four times by decantation with distilled water, a little more sulphuric acid added if necessary, and titrated with the permanganate solution. With pure solution—free from copper, arsenic, antimony, and other reducible metals—the zinc can be used over again until exhausted.

L. J. W. Jones.

Omaha, Neb., Aug. 26, 1899.

THE ONTARIO GOVERNMENT ASSAY OFFICE.

The Ontario Government assay office is located at Belleville, Ont., and is in charge of Mr. J. Walter Wells. The latest statement of laboratory work done at this office, which is conducted by the Provincial Bureau of Mines as an aid to the discovery and the development of the mineral resources of Ontario, shows that 277 determinations or assays were made during the months of August. These consisted of 232 gold assays, 14 for gold and silver, 19 for copper, 7 for nickel and 2 iron ores for partial analysis. Of these 168 determinations were done for the Bureau of Mines on which no fees were collected, while 109 were for the public on which fees aggregating $130.65 were collected. As the fees are about one-half the regular rate, this statement shows that the prospectors and mining men engaged in development of properties are now aware of the advantages which the office affords.

The office also reported on 30 samples sent in for identification, which consists of a description of the samples with the probable metallic contents and commercial value. This class of laboratory work has hitherto been done free of charge, but the office has instructions to impose a nominal fee in order to prevent abuse of the privilege. The samples came from all parts of the province, the gold ores from the Seine River and North Hastings districts, while the copper and nickel ores were sent from the Sudbury and Parry Sound districts.

The Bureau of Mines is conducting a temporary assaying plant in connection with the mineral mining exhibit at the Toronto Industrial Fair, where there are working plants of machinery for the treatment of gold and copper ores. Mr. Wells received instructions to take charge of the plant, but owing to increasing demand on this office, J. W. Bain, lecturer on mineralogy at the School of Practical Science, Toronto, is placed in charge. Several lots of ore from different properties in Eastern Ontario have been forwarded for treatment to this plant, which is one of the special industrial attractions at the fair.

PLACER MINING IN THE LENA REGION IN SIBERIA.

Written for the Engineering and Mining Journal by Isidor Davidov.

Placer mining on the Lena River in Siberia, as my 12 years' experience in the Russian Government mines in that region shows, is not an inexpensive holiday sort of affair. While any man, on payment of a fee of $3.50, can get a permit to go prospecting for pay dirt on the Lena River or its branches, he must be a rich man to do all that will be required of him before he even gets out his first spadeful.

Winter in Siberia is always what we call hard in this country. The creeks in the Lena River country are all believed to carry gold in the gravel beds over which they flow. The gold is generally coarse, and frequently large nuggets are found.

The prospector begins work in either October or November. He prefers to start in cold weather rather than to wait for the spring, for a very excellent reason. If he waits for warm weather he would be put to a great expense to get down to the bed of the creek. In November the water in his chosen creek is frozen clean down to the bed. He sinks a sort of shaft at regular distances; then he cuts out the ice until he reaches the bed of the creek. He now cuts or blasts the ground he has reached with so much difficulty in the hope of coming upon the precious yellow metal for which he is in search. If he finds it he marks the edge of the vein and after that the work of reaching the bed of the creek through the ice at other points along the indicated line is continued. This being done, he files his claim and in the spring brings gangs of men and horses to help him carry on the work. First he deflects the creek from the old channel in order that he may work without interruption by the flowing water.

It will be seen that this is a work of expense and difficulty, for some of the creeks are 200 ft. wide and 12 ft. deep; but it must be done and here is where the judgment of the mining expert comes into play.

The workmen dig down into the ground and are usually divided into gangs of 75 each. They dig out in connected sections, each gang working on its own section, and the horses cart the dirt at once to the place designated by the Government, where the gravel is to be washed and the gold which it may contain is saved.

BARGE TRANSPORTATION IN GERMANY.—The first two seagoing barges arrived at the port of Dortmund, Germany, on July 26th, chartered as an experiment from the Norddeutscher Lloyd by the Westphalische Transport Aktien-Gesellschaft. Each barge, 55 m. long and 8 m. beam, carries 600 tons when drawing 2.5 m. of water in the sea, but can only take 462 tons when drawing 2 m. in the canal. Accordingly each barge only brought 300 tons of Swedish iron ore from Emden for the Dortmund Union, and took on board 300 tons of coal at Dortmund for the Norddeutscher Lloyd at Bremen, the completion of the cargo to 600 tons taking place at Emden from one of the Transport Gesellschaft's 600-ton tenders, which accompanied the two barges.

THE CENTRAL ASIAN RAILROAD.—The Russian Imperial authorities have recently definitely resolved to extend the Central Asian Railway to the town of Werny and thence in a northerly direction. It now remains for the direction of this new line to be decided upon. A detachment of engineers has already left Tashkend for the purpose of making a preliminary survey. Two routes have been suggested; one would be across the Steppes to Orenburg, to the southwards of the Oural Mountains, and the other, by Semipalatinsk, to Baranaul and Krivoschtschekovo. The former route has very influential supporters in the persons of the cotton growers of Tashkend and the manufacturers of Moscow, all of whom naturally desire to have the shortest possible means of transit for conveying this raw material to Moscow. A recent conference at Semipalatinsk clearly proved that the route by that place and Barnaul will be the more advantageous. The authorities will, it is said, allow the new line to be built by private enterprise.

AUTOMATIC IGNITERS FOR GAS.—In a recent issue of the "Journal fur Gasbeleuchtung," Mr. C. Killing discusses the preparation of automatic igniters for coal gas. A mass of spongy platinum is unable to do this, although it will get hot if exposed to a stream of this gas. If, however, a pellet of spongy platinum is connected to a fine platinum wire the ignition may be effected, as the wire under these conditions becomes heated to a sufficient degree. Spongy platinum, if exposed much to the heat of the flame, soon loses its porous character, and to avoid this the plan has been adopted of using pellets of asbestos, or meerschaum dipped into chloride of platinum, and the metal finally reduced. These pellets are supported by platinum wires, which effect the actual ignition. Another plan which is stated to have proved successful consists in dipping a cotton fabric, through which fine platinum wire has been woven, into a mixture of thorium nitrate and chloride of platinum. On burning off the cotton the platinum wire remains intertwined with a mixture of thoria and platinum black.

THERMODYNAMICS OF THE HUMAN MACHINE.—In a paper published recently in the "Comptes Rendus," M. A. Chauveau gives particulars of a series of experiments made to determine the thermodynamic economy of the human machine. The apparatus consisted of a pair of treadmills, each 3 m. in diameter, mounted on the same shaft. One of these treadmills was surrounded by a small chamber, which was calibrated as a radiation calorimeter. A brake could be applied to either wheel at will, and served to both regulate the speed of rotation and to measure the energy exerted. The speed chosen was 80 revolutions per minute, which, with necessary corrections, corresponded to an effective work of 68 calories per hour. The calibration of the calorimeter was effected by means of an electric current passed through heating coils in the chamber. It was thus easy to determine the output of heat required to maintain this chamber at any given temperature above that of the room in which it was placed. The first series of experiments gave very concordant results. When the subject was doing useful work at the rate of 64 calories (units) per hour, he also radiated from his body extra heat amounting to 199 calories per hour. The efficiency of the human mechanism was, therefore, about 24.3 per cent.

FIREPROOFING TESTS.—The results of some interesting tests on a floor and on a ceiling made last March and April by the British Fire Prevention Committee have just been published. The floor was constructed of solid wooden beams 9 in. thick, close bedded, and the joints were stopped with fire-clay. The floor was subjected to a fierce fire for one hour, a temperature of 1,955° F. being attained near the end of the experiment. A stream of water was then applied for 5 minutes, and the whole rapidly cooled. Subsequent investigation showed that the under surface of the beams was charred to a depth of about 2 in., but beyond this the timber was quite sound and unaffected. The ceiling tested was of laths and asbestic plaster, and was exposed to a temperature of about 500° F. for half an hour, the temperature being then slowly raised to about 1,500°, after which a jet of water was turned on for 3 minutes, and the whole rapidly cooled. On examination at the end of the test, the ceiling proved to be but little injured, and the application of the water caused no damage. No portion fell either during the test or afterwards. Cracks had, however, developed over its surface, and some of the laths were charred, though none had ignited.

HOISTING ROPES IN GERMANY.—During the last three years the winding ropes in the Dortmund mine inspection district have been made exclusively of cast steel wire, two round iron wire ropes having been used in 1895 and two flat Manila-fibre ropes in 1893. During the period of 27 years from 1872 to 1898, during which a strict record has been kept of all particulars connected with winding ropes, the proportion of breakages has gradually, and with tolerable uniformity, become reduced from 19.3 to 0.54 per cent. of the whole number. Last year, out of the 369 ropes renewed at the 116 collieries, 316 were round and 53 flat. Two flat ropes broke suddenly, both of the mhaving been made of wire drawn from mild cast steel by Bocker & Co., of Schalke, one close to the drum when beginning the lift, after it had been in use 187 days and had raised a net load of 35,510,000 tons, and the other, also on beginning the lift, 250 m. (273 yds.) below the pulley, after having been in use 246 days and having raised a net load of 13,280,000 tons. Out of the total number of winding ropes (all of steel wire) used in the district last year, 301 were ordinary round, 53 flat, 13 lock coil and 2 of the flat strand description, 5 of the first named having been in use more than 1,600 days. The various reasons which determined the taking out of the ropes were breakage of individual wires in 200 cases, general wear in 70, changed conditions of winding in 33, too great reduction of length in 25, insufficient resistance to tensile strength as determined by testing the end cut off in 21, and alteration of form in 14.

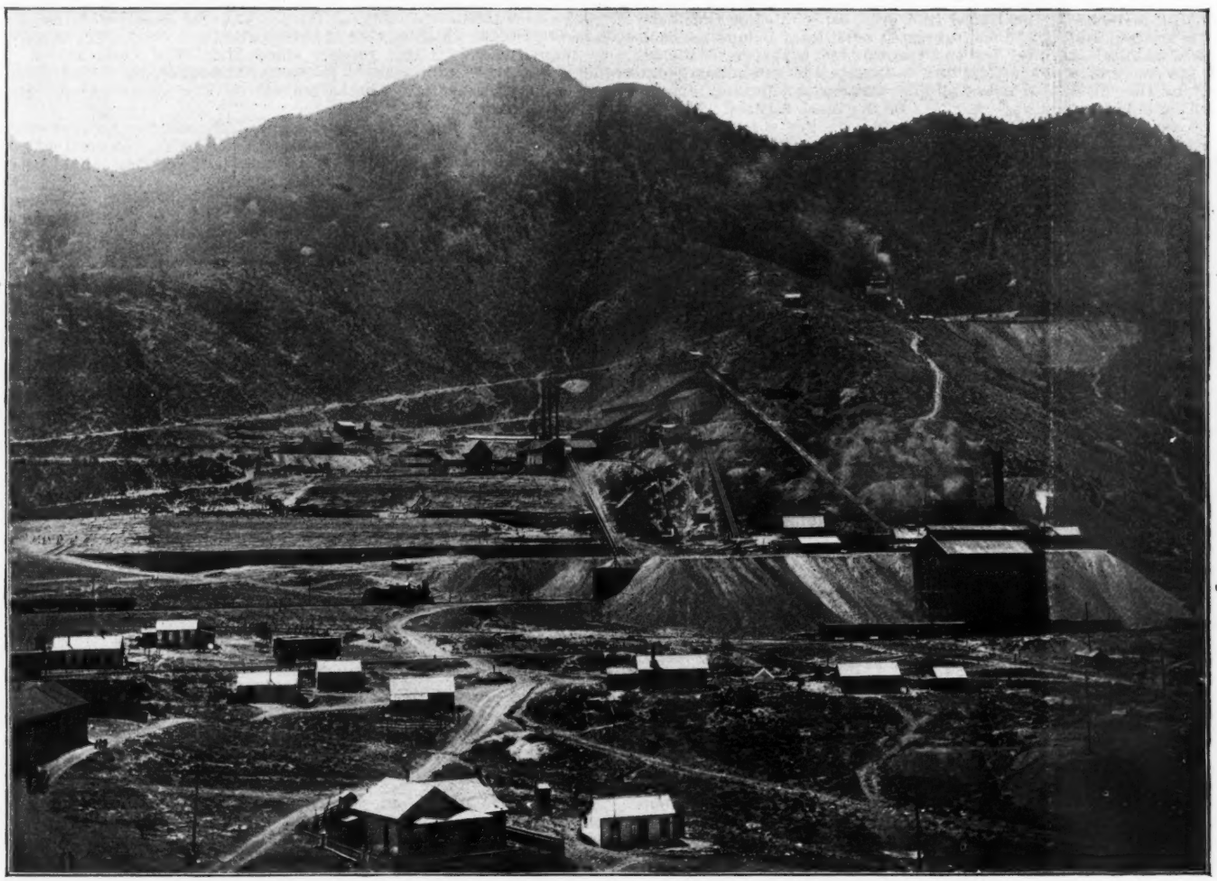
THE EUREKA HILL MINE, UTAH.

The illustration given on this and the following pages are reproductions of photographs for which we are indebted to the courtesy of Mr. George W. Riker. They both show the plant of the Eureka Hill Mining Company at Eureka, in the Tintic Mining District, Utah. The first view shows the shaft house and mill with the mine of the Centennial Eureka Company to the right. The second shows another view of the mine and mill with the connecting tramway. This is the mill referred to and briefly described in the article on "Water Requirements for Stamp Milling" in the "Engineering and Mining Journal" for September 2d, page 287.

THE USE OF FINE CONCENTRATES IN THE BLAST FURNACE.*

By J. Wiborgh.

By the introduction of magnetic and other methods of separation the power of enriching or improving iron ores, by the removal of barren or undesirable constituents, has been greatly increased, and by the use of such methods the waste in working, in the case of magnetic minerals at least, can be considerably diminished. The advantage arising from such operations is, however, largely qualified by the circumstance that the product or concentrate is usually obtained as a comparatively fine powder, which limits its utility to the smelter when compared with that of similar or even poorer ores obtained in larger masses, and therefore the question of how such material can best be applied is now becoming of importance.



EUREKA HILL HOISTING WORKS AND MILL, EUREKA, UTAH.

Powdered iron ores obtained by concentration may be utilized in several different ways, namely:

1. By direct addition to the charges in the blast furnace.
2. By agglomeration previously to charging in the blast furnace.
3. As a refining or softening material in the open-hearth furnace.
4. For the production of sponge iron for use in the open-hearth furnace.

1. Direct Use in the Blast Furnace.—The proportion of small ore that can be used in the blast furnace is subject to variation according to the conditions of fuel and working, but cannot, in most instances, be very large, limits being imposed by the tendency of the material, especially if it is of high density, such as pulverized magnetite, to overrun the fuel charge and come down to the tuyeres in an imperfectly reduced condition, as well as to form accretions or scaffolds by adhesion to the furnace walls above the hearth. As an example of the behavior of concentrates, experiments made in 1898 at the blast furnace at Vidlitz, in the Government of Olonetz, in Russia, show that in the smelting of rich and heavy concentrates the coal should be used in smaller pieces than is necessary with finer materials of a less dense character, such as lake and bog ores, purple ore, etc. This combination can, however, only be successfully handled in furnaces of small height, as in a tall furnace the close packing of the charge is necessarily attended with slow driving and unduly large production of carbon monoxide, from the prolonged contact of the gas from the reducing zone with the fuel above.

It is a matter of general experience that finely divided ore and ore dust readily adhere to the heated wall of the furnace, and gradually accumulate into large masses, which, falling into the region of the hearth, when detached by the pressure of the column of materials above them, meet with an insufficient body of fuel to effect their complete fusion, with the result of producing cold iron or choking. This tendency to form accretions or scaffolds is the principal cause restricting the use of powdered ore in large quantity in blast furnaces, but there are certain distinctions to be made. Thus, the tendency to scaffolding is greater with small than with large ore; with small grained ores of equal size it is greater with those of lower than higher density, and with those containing fusible minerals greater than with those carrying waste constituents of a refractory character. Other conditions influencing the result are the greater or less steepness of the bosh walls and the more or less refractory character of the materials used in the stack lining.

As a preventive of scaffolding with the materials under consideration, furnaces with cylindrical stacks or a bosh angle of 90° have been suggested, but the use of such a section would be attended with considerable difficulties. Notably the furnace must either be of small dimensions, or, if of a large capacity, it would be unreasonably wide, and the rapid driving necessitated by such a form would be suitable to the production of pig iron for forge use, or the production of malleable castings rather than a more silicious or manganiferous metal; and even though magnetic concentrates may be somewhat more easily reducible than similar ores in lump form, it is doubtful whether it could be advantageously used under the conditions of forced driving called for by the cylindrical form of stack.

The author is disposed to consider that the addition of concentrates up to about 50 per cent. of the charge may be regularly carried out in furnaces with a bosh angle of 83° to 84°. The washing of powdered ore with a view to increasing its reductibility is of less consequence than with the same ore in lumps, except, of course, when it contains sulphur, when it becomes necessary. Another inconvenience attending the use of powdered ore is the loss caused by dust in the gases, and in this respect the cylindrical stack would be disadvantageous on account of the velocity of the upward current in the stack, which would necessarily be greater than in a furnace of smaller bosh diameter.

2. Agglomeration Before Smelting in the Blast Furnace.—In order to avoid the inconveniences attending the use of small ore in the blast furnace, numerous methods have been proposed and tried for consoli-

*Abstract of paper read before the Iron and Steel Institute of Great Britain, August, 1899.

dating it into coherent masses or lumps as a preliminary to smelting. This may, in certain cases, be done without the addition of foreign matter, but, as a general rule, some binding material is required. There is a tolerably wide range of choice among the substances that can be used for this purpose. One condition, however, is necessary, namely, that nothing shall be used that would be injurious either to the product or detrimental to the working of the furnace, which excludes such a substance as gypsum, as likely to introduce sulphur into the iron, or magnesium chloride, which, by bringing chlorine or hydrochloric acid into the blast furnace gas, would be destructive to the ironwork of the stoves and boilers.

Powdered ores that are not particularly rich and contain easily fusible silicates, such as hornblende or pyroxenic minerals, may be made to cohere by heating in a reverbatory furnace up to the point necessary to produce incipient fusion of these accessory minerals; but to obtain a similar result with rich magnetic concentrates it would be necessary first to mix them with such a material; as, for instance, with easily fusible blast furnace slag. Such methods are, however, costly, as the temperature to which the mixture must be heated is higher, and the time required is longer, than is necessary in the ordinary method of ore calcining.

Caustic or slacked tempered to a stiff paste with water is the best binding material for powdered iron ores, especially for those containing a notable amount of iron silicates or silica. Briquettes made with such materials become harder by continued exposure to the air, first by the conversion of the lime into carbonate and subsequently into silicate, and the intimate mixture of the reducing and fluxing material in the mass tends to facilitate working in the blast furnace. For this latter reason, in the treatment of differently reducible silicates, such as heating furnace slags, it is sometimes found convenient to grind them to powder and mix them with lime and some charcoal dust into briquettes, in order to furnish a slag suitable for smelting in the blast furnace.

It has long been known that pulverulent materials, when mixed with tar, pitch, or bituminous coal and strongly heated, give, when cooled, hard and compact masses. This was applied by Weissman about 10 years ago in the production of so-called ore coke, which was made by mixing powdered ore with 20 per cent. of coal dust and 5 per cent. of pitch, pressing the mixture into blocks, which were coked at a strong heat applied slowly. This, however, proved to be too expensive for practical use, but the idea has been revived in a simpler form—namely, mixing small coal and powdered ore together, and coking the mixture in the ordinary way. Experiments in this direction, made at the Islinge Coke Works, with the concentrated magnetite obtained at the Lulea apatite separating works, have given remarkably good results. The powdered ore, averaging about 1 mm. in the size of the grains and containing about 70 per cent. of iron, when mixed with 30 to 40 per cent. of coal gave a product which was hard and compact and could be quenched with water in the same way as ordinary coke of good quality. By coking, the ore was reduced to ferrous oxide with some metallic iron, and showed no great tendency to pass into a higher state of oxidation even when exposed to the air for a considerable time. With easily reducible ores, however, it is probable that there would be a larger production of metallic iron which would readily oxidize when quenched with water, or by long exposure to the atmosphere, with the result of diminishing the strength of the coke.

Among the causes likely to produce irregularities in working may be mentioned the difficulty of so mixing the ore and coal as to ensure a product of uniform richness; the probability that such mixtures would contract less than coal alone in coking, so that there might be trouble in drawing the charge; and the scorifying effect of the ore dust upon the heated brickwork of the oven; while in the smelting furnace the possibility of such coke coming down the tuyeres unchanged with a partial combustion of the contained iron, as well as of the carbon, has to be considered. But as has been before stated, experimental evidence upon such points is entirely wanting.

3. Use of Powdered Ore in the Open-Hearth Furnace.—Experiments on the substitution of powdered for lump ore in the open-hearth furnace were made by Dr. H. Tholander in the basic open-hearth furnace at Hogfors in September, 1897. The material used was the concentrated ore from the Lulea magnetic separating works, which contains 72 per cent. of iron and 0.1 per cent. phosphorus, the average size of the grains being about 1 mm. Four successive charges were made, the first three with pig iron, scrap and ore concentrate, which was worked in the same manner as those, with the Kungsgruvfa lump ore currently used; while in the fourth, pig iron and ore concentrate alone, with some limestone, were used, the final additions of ferro manganese and ferro silicon being made in the usual way. The final charge consisted of 11.1 tons of pig iron and 1.21 tons of ore concentrate, which quantity of metal should, according to previous experience, have yielded about 92 per cent. of its weight in ingots, or 10.21 tons as a maximum. The actual weight obtained was, however, 10.87 tons, showing an excess of 0.66 ton, recovered from the 1.21 tons of ore added, corresponding to a reduction of 57 out of the 72 units, or a utilization of 75 per cent. of the iron contained in the ore. The time required for working this charge was about one-half more than when scrap was used; but Dr. Tholander considers that, with longer experience of the method, this might probably be reduced, and also that it would be possible to increase the amount of ore used from 11 to 15 per cent. of the weight of the pig iron.

Another application, due to Mr. H. Brinell, is an improvement on Ellershausen's process of incorporating the ore with the pig metal at the moment of casting. An ingot mold is partly filled with fluid metal from a ladle, and when it is about to solidify a quantity of small ore is thrown upon the surface, and this is repeated until the mold is full. From 12 to 15 per cent. of ore can be added without notably diminishing the cohesion of the ingots which are to be used instead of pig iron in the open-hearth furnace charge. Rich and heavy concentrates are admirably suited for this use.

4. Direct Reduction of Pulverulent Ores.—As it is possible to obtain concentrated ore containing more than 70 per cent. of iron, and practically free from earthy waste, it seems to be an unnecessarily circuitous proceeding to convert it first into pig iron when soft iron or steel is required, such material being especially well suited for direct reduction to sponge iron capable of replacing scrap in the open-hearth furnace. For this purpose the author has designed a furnace. This contains a heating chamber in which the powdered ore supplied from a storage hopper is brought up to a high temperature by the spent flame, and a reducing hearth with a hopper for supplying charcoal dust. The heating is done partly by producer or water gas, from an outside supply, and partly by the combustion of the carbon monoxide resulting from the reduction of the ore by charcoal. The substructure contains a system of recuperative pipes, and a capacious sheet-iron reservoir is provided for cooling the reduced iron out of contact with the air. The reduced material, which is only very slowly changed by exposure to the atmosphere, consists of a mixture of iron and charcoal powder, which can be removed by an air blast or a magnetic separator. For use in the open-hearth furnace it may be packed into cast or sheet iron cases, or compacted by pressure into masses to take the place of scrap in the charge.

ACCIDENTS FROM FALLS OF ROOF.

A circular sent out by the Secretary of State to mine owners in Great Britain calls attention to the fact that in 1898 out of 908 deaths from accidents in coal mines, 431, or 47.4 per cent., were caused by falls of ground, while in 1897 the proportion was 51.6. There has been no improvement in this respect since 1892. The Secretary of State therefore advises mine owners to observe the following precautions:

(i.) A supply of suitable timber should be kept ready for use in each working place.

(ii.) Increased supervision by the mine officials and stricter enforcement of rules and instructions are necessary. More frequent inspection of the parts where persons work or pass should be made during shifts to detect dangerous parts of roof or side. Many accidents are caused by delay on the part of the miner himself to set the necessary props for his working place, and more supervision by the officials is necessary to enforce observance of the rules upon this subject.

(iii.) Many accidents which now occur during the drawing of timber would be obviated if the use of the "ringer and chain," or other similar device, were made compulsory.

(iv.) The precaution, however, which the Inspectors consider of greatest importance is the systematic timbering of the working places. The question of when and where props should be set is one which should not be left entirely to the judgment of the individual miner. He should be free to put up additional props when he considers them required, but should have no discretion to omit setting props altogether, or to exceed a fixed maximum distance between them. Experience shows that a large proportion of the accidents occur from falls of roof in which no fault or slip could previously be observed, and this source of danger can only be effectively met by the timbering being done systematically: the Manager specifying for every seam or working in the mine under his control the maximum distance apart at which the props and other supports may be fixed. This is the practice already in some collieries.

ANTIMONY IN BRASS.—In a paper read before the American Institute of Mining Engineers, Mr. E. S. Sperry has pointed out that the occurrence of cracks during the rolling of brass is due, in some cases at least, to the presence of impurities in the copper of the alloy. In certain investigations made by this author, he added to a brass composition made of 60 per cent. of Lake copper and 40 per cent. zinc, quantities of antimony varying from 0.01 per cent. up to 0.65 per cent., and tested the behavior of the alloys thus obtained in the rolling mill. He found that when the percentage of antimony reached as much as 0.02 per cent. the fracture of the rolled metal indicated its presence.

A GERMAN PUMPING ENGINE.—A recent steam pumping plant erected in Germany is at the Piesberg Coal Mine near Osnabruck. This has two tandem compound condensing engines placed back to back in an engine room 128 ft. long and 13 ft. broad, together lifting 12 cubic meters when making 60 revolutions per minute. The pumps are 275 mm. diameter and 900 mm. stroke; the lift is 180 meters. On trial these engines developed 303.9 indicated H. P. for 264.2 effective H. P. in water delivered, including friction in the pipes, with a consumption of steam, at 6.8 atmospheres effective pressure, of 7.92 kgs. per indicated, or 9.11 kgs. per effective H. P. per hour. A very large underground engine now in course of construction, intended to lift 30 cubic meters per minute about 400 ft., is of the triple expansion form, arranged as a double tandem, with two low-pressure cylinders, and is expected to work with only 7 kilograms to 7½ kilograms of steam per effective H. P. per hour.

A NEW COAL QUESTION.—The Berlin correspondent of the London "Economist" notes that in connection with some previous industrial amalgamations, the question has come up in Germany whether a coal mine that has been absorbed by another company is absolved from its contract with the coal syndicate of which it had till then been a member. The question has recently come before the courts in two cases for decision, and in both instances it was decided that the coal mine cannot get rid of its obligations to the syndicate through such amalgamations. Thus, all the companies that acquire coal mines in order to control their own coal supply will have to pay the syndicate the penalty named in the contract for every ton of coal not delivered according to contract with the syndicate. As that penalty is 50 marks a ton, of course the companies acquiring such mines would, rather than pay it, continue to buy their coal from the syndicate till the expiration of the contracts at the end of 1905; but a compromise has been arranged, under which the syndicate agrees to enforce its claims after January 1st, 1901, only for that part of the coal output which exceeds the consumption of the iron companies in question. In the meantime the syndicate agrees further to turn over to the iron companies as much of the output of the mines as possible.

NOTES ON SILVER LOSSES IN SMELTING.*

Written for the Engineering and Mining Journal by Malvern W. Iles.

The records of the Globe Smelter at Denver, Colo., showed a commercial loss for the month of March, 1893, of $35,400. This amount was so large that the writer determined to make an exhaustive study of this matter, not with the idea of attaching blame to any particular person or thing, but with an earnest desire to locate the true cause of silver losses in this industry, with the hope of an improvement in this department of metallurgy. It is only fair to the writer to state that the actual silver losses during 1893 were subsequently shown to be not excessive; that these losses were imaginary and not real, owing to heavy furnace absorption of gold, silver and lead, and that these supposed losses were afterwards recovered, particularly from two furnaces which were found to have sprung a leak in the crucibles. The records show a loss of 2.56 per cent. silver for the entire year 1893. The figure does not, however, show the actual silver loss, as the furnace absorptions, as stated, were afterwards recovered. Rapid metallurgical changes took place since 1893, and the losses of silver have to a very large extent been eliminated. It is only fair, also, to state that some of the facts and figures given in this investigation are not absolutely correct, yet some of them are of such a nature that they will forever stand the test of time.

By reason of this research, we were brought face to face with false practices, false methods; and having at all times the support of an intelligent management—and a management which was not afraid to depart from old books and old practices—the writer, in conjunction with Mr. Dennis Sheedy hewed out an entirely new path. The books of the company show that there was a real margin on the ore per ton of $5.689, and that the real cost per ton for working the ore was $6.44; that is to say, it cost more to work the ore than the margin on which the ore was bought. This difference amounts to $0.751 per ton of ore.

The margin per ton on the ore only was $5.747; by subtracting this from the cost of working the ore we get $0.693 as the loss per ton on the ore only. In the purchase of ores, not only the cost of treating the ore, or smelting it, should be considered, but also the costs for working the by-products—as mattes and flue dust—and all other legitimate items; this brings the loss per ton up to $0.751.

There were smelted during March 13,828 tons of ore; on each ton there was a loss due to the manner in which the ore was purchased of $0.751; therefore we get $10,385 as the amount of loss due to bad purchasing of ore; by subtracting this amount from the total loss there would still be unaccounted for $25,015. During this month there was a loss due to quotations on lead and silver of $2,721. This leaves as the net loss by bad smelting in one month $22,294.

What was the occasion or reason for this bad work? In order to answer this question, we will have to look into all the conditions which prevailed during March, 1893.

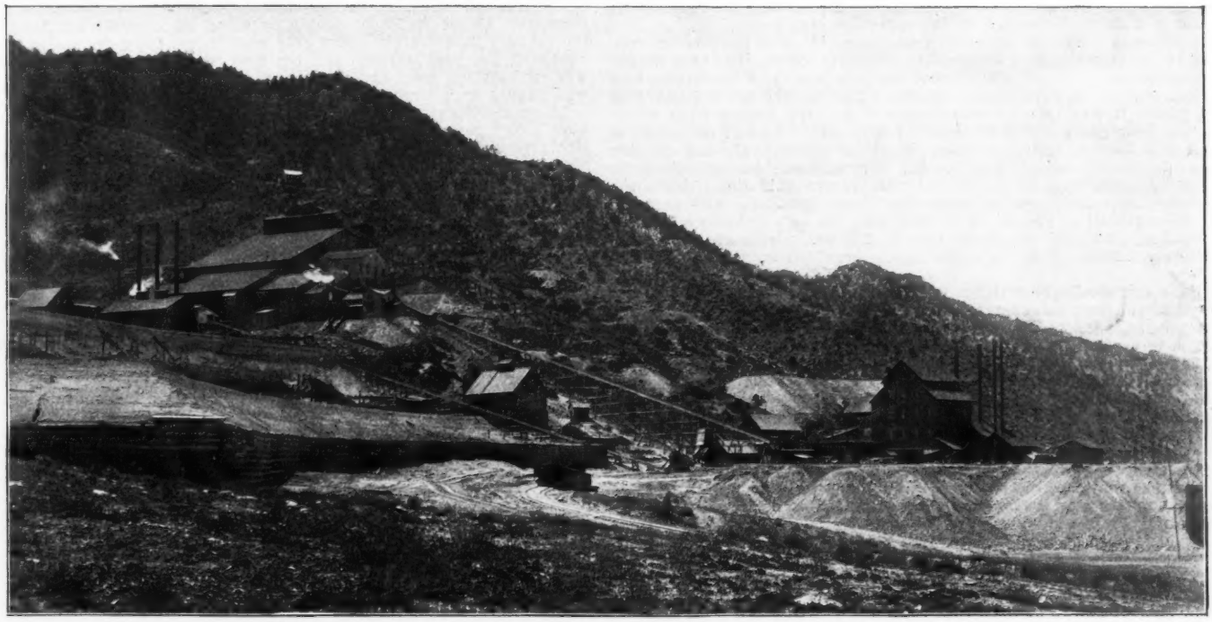
The number of furnace days was 230, the tons smelted per day per furnace was 60; an amount greater than the usual average. The furnaces then did not run slow, but fast; possibly too fast for the conditions that then prevailed. It is possible to run furnaces faster than the appliance for the saving of matte properly will permit. The amount of matte made was large, yet not abnormally so, 1,003 tons or 7.25 per cent. In May, 1893, there was made 13.3 per cent. of matte and still there was a profit of $6,867, and we have many records of making 8, 9 and 10 per cent. matte and still making money; it is then safe to conclude that it was not the quantity of matte made that produced this result. As for the quality of matte made, this is an entirely different question and will be discussed later on.

The cost of matte per ton of ore was 46 cts., which was rather under the average cost. The cost of treating the matte had nothing to do with the question, as in August, 1893, when the books show a profit of $26,369, the cost of treatment of matte per ton of ore was 44½c.

Flue Dust.—The total flue-dust made during the month was 258.3 tons; quite a large amount, and the highest on record, except during the two preceding months: January, 267.4 tons; February, 294.4 tons. From the bare figures alone one would conclude that possibly the blast was too high. As the Globe system of dust-chambers and bag-house is so complete that losses of silver and lead and gold cannot occur through dust and fume, it was therefore safe to conclude that much of the $22,300 was an actual loss and went over the dump. The proportion of dust amounted to 1.87 per cent. While this is high in comparison with September, when it was 0.68 per cent., yet in February it was 2.36 per cent., and all through 1892 there was an average of about 2 per cent. dust produced. The cost of working the dust was 12c. per ton of ore treated.

The smelting per day was 446 tons. It is possible to smelt too fast when producing certain kinds of light mattes which do not separate easily.

Roasting.—There were roasted during this month 5,556 tons of ore, or 179.2 tons per day. It cost per ton to roast this ore $3.417 on the fuse boxes and cinter furnaces; on the Brown roasters it cost $2.504 per ton. The cost of roasting was less than in 1887, 1888, 1889, 1890, 1891 and 1892. The question may be well asked, Did it not cost too little? That is to say, if there was much zinc present, it should be roasted better in order to convert the sulphide of zinc into an oxide so that the zinc would pass off as a silicate into the slag, instead of passing into the matte as a sulphide, making them specifically light. Also, would the zinc enter the slag as a sulphide. Of course, when the amount of lead available was very small, as was the case in March, one could not possibly increase the density of the matte save by the addition of copper, and if the metallurgist had run up the percentage of copper in the matte to make it heavier, then the lead-wells would have been lost, in which case the company would have lost even more matte over the dump.



EUREKA HILL MILL AND HOISTING WORKS, EUREKA, UTAH.

There never was an idea more fallacious, more disastrous and suicidal in its effects than that the cost of roasting should be the same for all sulphur ores. Zinc sulphide ores require a long time to roast, and this increases the cost. The celebrated Bed 20 of the Holden Smelter lost money heavily because it was insisted upon putting on the bed raw A. Y. & Minnie ore. I positively objected to this procedure, but others figured that it was all right, and that settled the matter. The consequences were taken humbly and meekly by the metallurgist as an evidence of his bad work. There are certain ores and certain times which will allow the metallurgist to increase the size of the charge on the roasters—he should be the judge of this. If he is forced to increase the size of the charge in order to obtain, say, 5 or 10 tons per day, this amount may determine the profit or loss of the entire works. Ore roasted poorly and containing at the same time much sulphide of zinc should not be fed into blast furnaces. Now, as a matter of fact, the roasting furnaces treated much zinc ore during this month, too much raw matte was fed into the blast furnaces, and there was actually lost large quantities of silver over the dump, due to floating, light zinc matte, with a shortage of lead on the charge. The roasting details were as follows: Labor, $1.851; coal, $0.793; general expenses, $0.773; total, $3,417. As already stated, the cost of roasting by the Brown-O'Harra furnaces was $2.504 per ton. This consists of: Labor, $0.994; coal, $0.905; general expense, $0.605; total, $2.504.

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The cost of smelting during March was $3.402 per ton; this consisted of the following items: Labor, $1.152; coke, $1.175; charcoal, $0.190; limestone, $0.225; boiler coal, $0.050; general expense, $0.290; interest, $0.115; total, $3.197; office labor, $0.205; total, $3.402. A careful comparison of the above with previous months shows nothing wrong, or abnormally high; on the contrary a trifle under the general average.

The cost of unloading and sampling ore during March was 43.2c. per ton; of course this is higher than in the summer months, and the cost in July was only 23.6c. per ton. Finally, the bag-house was only a tax of 8c. per ton on the ore treated. We must therefore look to other causes for this loss, a great part of which I fear is real, while a part only can be legitimately accounted for. The slags were high during March, silver being 1.45 oz. per ton and lead 0.43 per cent. Comparing this with other months in 1893, we have:

Assays on Slags for 1893.

	Ag. oz.	Pb. %
January	1.27	0.57
February	1.74	0.80
March	1.45	0.43
April	1.40	0.50
May	1.28	0.32
June	0.76	0.36
July	0.84	0.42
August	0.52	0.89
September	0.65	0.60
October	0.68	0.56
November	0.73	0.61
December	0.87	0.57

It will be seen that March was the highest month in silver, except February, which was 1.74 oz. Ag. per ton, while the lead in slag was somewhat under the average. This would indicate that the losses were not due to a shortage in fuel, as the reduction was good.

The silver exists in mattes mainly as a sulphide, and the amount contained in the matte largely determines the silver losses. It is very important to produce low grade mattes, and the only way the writer knows how to effect this is to have plenty of lead. During the early history of these works it was rare to make a matte running higher than 80 oz. silver per ton; generally 50 to 70 oz. I firmly believe that the grade of the mattes has steadily increased in silver since 1891, and we are drifting in the wrong direction. Last February the average silver in the mattes taken from daily samples was 159 oz.; this alone shows the probability that large silver losses must have resulted. February 3d, 1893, the mattes ran 224 oz.; February 4th, 186 oz.; February 5th, 200 oz.; February 6th, 155 oz.; February 7th, 225 oz. These are dangerous conditions. It should never occur again, provided ample lead is provided.

A book can easily be written upon mattes; but this is sufficient to show that the amount of mattes produced, the grade of mattes, the character of the matte, and the closeness with which they are saved, are the most important things the smelter has to deal with.

Of course, the silver lost through the slags *per se* is somewhat a criterion of the silver losses, but it does not show all, as it does not tell how much matte was lost. At this time (March) the present matte saving appliances were not in operation. The chief silver, lead and gold losses are therefore attributable to the matte which went over the dump with the slag.

Now, let us enquire into the nature of the matte formed. We find first that the matte contained much zinc and hence was a light matte; it did not separate well from the slag, as we know positively from the amount of Mahala ore which was treated. Many things affect the percentage of lead in slags; plenty of fuel produces mattes running low in lead, and scrap iron will generally make mattes run lower in lead. Silicious slags make mattes running high in lead; iron slags and lime slags all tend to make the mattes run lower in lead. Whenever mattes run high in lead, it shows at once that something is wrong, and it may be safely concluded that the fuel is too low, or that there is a shortage either in lime or iron, particularly lime. The gold in mattes usually runs from 0.03 to 0.10 oz.; this is so small that it has no noticeable effect. The mattes in 1893 ran as follows:

	Cu. %	Pb. % net.	Ag. oz.% per ton.
January	11.2	11.8	100
February	10.0	19.6	159
March	8.8	12.9	108
April	9.4	11.3	101
May	10.0	9.9	105
June	13.1	11.2	88[2]
July	9.7	11.5	82
August	14.6	15.0	70
September	14.2	16.6	93
October	18.3	15.3	108
November	15.3	14.5	97

The above interesting and valuable table shows that the March mattes contained 8.8 per cent. copper, the lowest percentage during the whole year, and from this we judge they were specifically lightest. The matte contained 12.9 per cent. lead and 108 oz. silver per ton. It may be asked why was not the amount of copper increased in order to make the matte heavier? The answer is very plain, because the amount of lead available was small, entirely too small for good metallurgical work; therefore if more copper had been added the lead-wells would all have been lost and even greater losses would have been sustained. It may be positively stated that whenever the lead wells are closed up one is almost sure to lose matte. Even with our present improved plan a little matte was lost for a part of a shift in November, but this loss was promptly stopped by opening up the lead-wells.

The fiery specks or bright particles seen floating on top of a freshly drawn pot of slag are matte in so fine a state of division that they do not settle. A number of these top shells were sorted out from the other portion of the slag and these specks carefully removed by a pointed instrument and then tested, giving the following results: 102 oz. silver per ton; 9.6 per cent. lead (wet assay); 8.5 per cent. copper; 5.2 per cent. zinc. The same matte which had oxidized in part from the inside of the shells gave: 108 oz. silver; 10.6 per cent. lead (wet assay); 11.2 per cent. copper; 3.2 per cent. zinc. Hense it is positively shown that float matte contains a larger amount of zinc than that which settles to the bottom of the pot.

We need larger settling basins, and some way to keep the slag quiet after it is drawn from the furnace; and the matte should be kept just as liquid as it flows from the furnace.

There is an intimate relation existing between the grade of the bullion in silver and the amount of silver which will enter mattes. High silver bullion means high silver in the mattes, and with a given matte saving appliance the higher the silver in the mattes the greater will be the silver loss. This statement, however, must be qualified by saying the heavier the mattes are, the closer the saving. There is absolutely nothing so dangerous about this business as to have mattes running high in silver, and much zinc contained therein with a shortage in the lead supply. Practically this is the cause of silver losses.

Furnace Charges.—If the ore treated is running low in lead, and has plenty of zinc, the mattes will invariably run high in silver. We can not then save the mattes closely, even with the perfected system now used. Under such conditions losses are sure to occur! If the furnaces are urged to their utmost speed it only hastens one's ruin. When one has zincy mattes high in silver, the tonnage should not be urged. Tonnage is very important, but it is sometimes suicidal to obtain it! The only way to handle ores containing much zinc is to have plenty of lead.

At the Globe the amount of silver which enters the mattes has steadily increased during the past three years. This fact was determined from the records of the company, the results being as follows:

	Gold.	Silver.	Lead.
1891	0.65	74.50	11.61
1892	0.66	95.20	14.00
1893	0.87	101.60	13.00

The amount of lead on the furnace charges has likewise steadily decreased during the past three years. Recently we reduced the mattes from over 100 oz. to 50 oz. simply by using more lead, in order to keep the refinery in operation. Not only was the grade of the matte too high (101.6 oz. per ton) during 1893, but also the amount of matte produced was entirely too great except in September, when much "Amethyst" ore was treated with a minimum amount of roasted ore.

There are many reasons which make me think there should not be over 5 to 7 per cent. matte produced. One fact has recently been positively proven, and that is, to make as little matte as possible, and as low grade as possible in silver.

Let us enquire now into the grade of bullion made in 1893. By taking from the lead wells daily a small portion and assaying it, we find the grade to be, for:

	Lead-well Sample.			Lead-well Sample.	
January	279	oz. silver	July	255	oz. silver.
February	381	" "	August	212	" "
March	360	" "	September	285	" "
April	307	" "	October	306	" "
May	369	" "	November	278	" "
June	306	" "			

We see that the grade of the bullion was high during March, namely, 360 oz.; the company's books, however, showing 347 oz. as the average grade. The very high grade of bullion during January, February and March; the high slags, the high grade mattes, all tend to show that the bad work during March should be partially distributed to January and February.

One of the chief evils at these works was the poor assortment of ores. They are very apt to buy what other people do not want. They are thus habitually short of lead, iron, silica. Thus an ore is being used running over 60 per cent. sulphate of barium. This makes much matte, and too much barium in slag increases their specific gravity and the matte does not settle readily through it. It also causes the furnaces to run slowly. Recently we were forced to make a slag containing 10.4 per cent. barium for the want of silicious ores; this is all wrong, as it made a slag very heavy and the matte settled very poorly indeed, occasioning much loss in silver. At best there is not a great difference in the specific gravity between matte and slag. A sample of the slag and matte was taken on September 17th, 1892, yielding the following specific gravities:

	Slag.	Matte.
Furnace No. 1	3.282	4.299
" " 2	3.387	3.903
" " 3	3.353	4.460
" " 9	3.099	3.924
" " 10	3.062	4.000
" " 11	3.373	4.248
Average	3.25	4.14
Difference		0.89

In order to obtain a more representative sample of matte, the following samples were tested, giving

Matte produced by :

	Sp. Gr.	
Bed 82	4.230	
Bed 84	4.15	
Bed 88	4.497	
Bed 91	3.866	
Bed 91	4.000	(Resample)
Bed 92	3.834	
Bed 92	3.632	(Resample)
Bed 97	4.000	
Bed 98	4.353	
Bed 99	3.997	
Average	4.050	

This average is somewhat low, because of the fact that the samples of the bed mattes invariably contain some slag, which is due to imperfect sorting of the matte from the slag. A lump of pure matte taken from slag concentration No. 1, August 23d, 1892, gave 4.344. This, it will be seen, is considerably above the matte taken directly from the furnaces, also as shown by the bed mattes. This is explained by the fact that the mattes made from slag concentrations are higher in copper, and the entrance of copper into mattes brings in lead, and it is the lead which makes them specifically higher.

We know that mattes are a composite of zinc, lead, iron and copper in combination with sulphur. The pure sulphides of these metals as they exist in nature have the following densities: Zinc sulphide, 3.9 to 4.2; copper sulphide, 4.1 to 4.3; iron sulphide, 4.83 to 5.2; lead sulphide, 7.25 to 7.7. From the above it would be concluded that zinc makes

light mattes, and lead makes heavy mattes; this is exactly what experience teaches us. A statement of the pounds of bullion made, the number of ounces silver contained in the bullion, and the average assay is shown by the table below:

	Bullion, lbs.	Ag. oz.	Av. Assay per ton, oz.
January	2,549,784	376,578	295.4
February	1,993,196	387,112.5	388.43
March	2,338,922	405,900.2	347.00

A careful investigation of the slag produced during last March shows that its composition was all right and practically the same as that made during months during which a profit on the ores smelted was made; in order to compare the composition of the slag made each month, an average was taken by months, giving rise to the following valuable table bearing on this subject:

Composition of Slag by Months During the Year 1893.

	Zu.	SiO_2.	Fe + Mn.	CaO.	BaO+. MgO.
January	4.1	31.18	27.9	16.78	5.09
February	4.4	32.30	27.4	17.20	5.00
March	4.0	32.00	29.4	16.60	4.65
April	5.2	31.60	28.14	14.76	8.66
May	4.26	32.00	29.16	14.87	5.73
June	3.90	32.10	28.76	15.81	5.00
July	5.46	31.83	28.95	15.10	5.60
August	5.71	31.30	28.00	15.30	3.50
September	2.80	32.20	26.30	22.70	4.00
October	3.60	31.20	27.50	19.39	2.36
November	4.81	30.71	29.85	16.26	1.70
December	5.32	30.79	30.39	11.99	7.40

We find nothing to condemn or criticise in the slag made in March so far as the composition is concerned. The zinc in the slags was 4 per cent., while in August—a good month, financially considered—it was 5.71 per cent. The lowest zinc in the slags was made in September, when little sulphide ores or roasted ores went to the blast furnaces.

Many years' experience leads me to state that one should never allow more than 6 per cent. zinc to enter the slag. While slag can be made which will contain a higher percentage, yet I think it is metallurgically and financially a bad practice. I am firmly convinced that it is not the zinc which enters slag, chemically combined with silicon, which gives rise to silver losses, but the zinc which enters the matte which entails heavy silver losses. I have already pointed out that whenever ores containing much zinc are treated it is very necessary to have plenty of lead to wash the silver out of the matte and slags; and always run as high a percent of copper as possible in order to increase the density of the mattes. Of course, if the copper becomes too high it will cause a stoppage of the lead-wells, then you have exactly the conditions which will occasion high silver losses. A very large amount of silver is annually lost at these and all similar works by the imperfect separation of light zincy mattes.

A combination of zinc and barium has always been regarded by metallurgists as offering great difficulties. The chief reason for this is the fact that zinc makes the mattes lighter, while barium makes the slags heavier. The richer the matte is in silver the greater will be the silver losses.

While we have made at these works a very great improvement in collecting and saving of matte, yet the system is far from perfect, and much is yet to be done in this direction. In my judgment the conditions which must be complied with in order to solve this question are the following:

A. Quick removal of matte and slag from the furnace.
B. Cheap removal of matte and slag from the furnace.
C. Concentration of matte and slag into one large furnace.
D. Maintenance of matte and slag in perfectly liquid form.
E. Sufficient time for matte to separate.
F. Cheap and quick removal of matte and slag from the central storage tank, basin or furnace.

From the foregoing remarks one would naturally conclude that the chief aim of the mtallurgist would be to produce slags as light as possible and mattes as heavy as possible. In the main this is correct, yet the subject of viscosity should always be borne in mind. A light slag when viscid separates matte more imperfectly than a slag which is heavier, but thin.

An examination of the March ore bed sheet shows the following facts:

Ore smelted	12,933.99 tons—with working margin,	$74,328
Matte smelted	723.59 tons—with working margin,	3,256
Dust smelted	168.94 tons—with working margin,	1,081
Scrap lead	2.10 tons—with working margin,	.....
	13,828.62	$78,665

Expenses in March for treating 13,828.62 tons material was as follows: Fuel and fluxes, $28,165; labor, $30,683; office and supplies, $7,209; repairs and general expense, $4,370; interest and exchange, $2,726; matte—cost of working, $9,216; flue dust—cost of working, $2,149; scrap lead—cost of working, $81; 3d chamber dust—cost of working, $215.50; big pot shells, $4,235.29; total expenses, $89,050.31. The expenses are greater than the working margin; hence a loss of $10,385.

To the expenses must be added the losses due to gold, silver and lead, which in this case were as follows: Gold, $224; silver, $15,089; lead, $6,981; total, $22,294. Adding this to $89,051 expenses we have a total of $111,345. Adding the loss in quotations we get, as the final total, loss of $35,400.

Before making any statement of the losses due to bad smelting, let us find out all the bed sheets show. The slag furnaces smelted 130 tons ore with slag; the lead furnace smelted 13,689.62 tons; a total of 13,828.62 tons. In order to ascertain the amount of gold, silver and lead loss during March, it is necessary to take from the ore and bed books the amounts of each of these charged to the March smelting account, and deduct from this the total quantities which came out of the furnaces in the shape of bullion, matte, dust, scrap lead, etc. The books show:

	Went In. Au. oz.	Ag. oz.	Pb. lbs.
March acct.	3,086.51	561,918.4	3,283,877
Loss in cin.	4.72	5,192.3	52,144
Totals	3,091.23	577,110.7	3,336,021

	Came Out. Au. oz.	Ag. oz.	Pb. lbs.
Bullion	2,873.96	413,309.9	2,345,753
Matte	147.37	96,410.4	252,264
Dust	46.70	6,958.3	131,694
Scrap lead	8.27	1,486.9	7,025
3rd cham. dust	3.72	545.6	12,276
Big pot shells	.....	8,455.2	32,520
Totals	3,080.02	527,666.3	2,781,532

The loss, 11.21 oz. gold; 39,444.4 oz. silver; 554,489 lbs. lead. Expressed in percentages, we have lost 0.36 gold; 7.02 silver; 16.89 lead.

The cost per ton of ore smelted for coke was $1.175; charcoal, $0.190; labor, $1,152; limestone, $0.225. Since the above items are not abnormally high it is not necessary to look for any errors along this line. The offioe expenses are practically the same each month, hence we pass this. As to supplies, there was a great deal of construction going on, No. 7 furnace was being built, and much was purchased both for supplies and construction. It is customary to charge off all the supplies purchased during a single month to that particular month on the bedsheets; it makes no difference whether the supplies are used that month or not. In this way $1,700 more is charged up to the month than is in in the strict sense correct, reducing the real loss to $20,597.

We pass the items of repair, general expenses, interest and exchange, assuming that the figures are correct. There is an item of $9,216 charged up to this month as an expense in working the matte produced, which amounted to 1.003 tons, or 7.25 per cent. of the ore smelted. For labor and fuel and superintendence there is a customary charge of $4.50 per ton. Taking the loss in silver and lead into consideration, there is an additional amount which will bring the total loss up to $9 or $10, varying with each particular lot of matte, according to the amount of silver contained in the matte.

(To be Continued.)

ABSTRACTS OF OFFICIAL REPORTS.

Mount Lyell Mining and Railway Company, Tasmania.

The directors' report for the half year ending March 31st, 1899, says that systematic exploration work has been carried on and in the No. 5 tunnel, south drive, has been attended with gratifying results. While extending this drive payable ore was met with early in February last, of grade similar to that in the stopes above. At the close of the half year this rich ore is still being driven on, and its value continues such as to make further developments in this, the lowest workings, of the greatest interest.

Special efforts are being made to determine the extent of this ore underfoot. A winze has been started on same, and at the date of this report is down 22 ft., the average value of the ore, so far broken, being 9.08 per cent. copper, 15 oz. silver, 0.1 oz. gold. In the open cut excellent progress has been made with the removal of the overburden, and the various ore benches themselves are well prepared to meet the demands which the full furnace plant will make upon the output of excavated ore.

Exploration work has been carried on outside the main ore body, from the No. 4 tunnel, south drive, along the contact of the conglomerate and schist, but without special results, so that this work has been discontinued for the present. On Block 13/86 work of similar exploratory nature has also been in progress with a view to testing favorable indications met with while carrying on surface prospecting on this block. This work has so far not disclosed anything of importance, but operations are being continued.

The whole of the machinery and appliances for the aerial ropeway for the conveyance of ore from the mine to the reduction works were delivered during the half year. Special efforts were made to secure its early completion, which resulted in the initiation of active transportation of ore in quantity on April 20th.

In the reduction works furnaces Nos. 7, 8 and 9 were blown in during the half year, and run as required in conjunction with the furnaces in the No. 1 plant, the completion of furnaces Nos. 10 and 11 being, however, made to coincide with the completion of the aerial ropeway, the earlier furnaces being fully capable of treating the maximum quantity of ore that could be transported over the haulage line. The erection of the reverbatory furnace for the treatment of flue dust has been completed and the furnace brought into use. The second half of the converter plant, which is being erected to cope with the increased output from the full furnace plant, is approaching completion, and will, with the original plant, be fully capable of treating the whole of the matte resulting from the furnaces, including that derived from purchased ores. Full advantage has been taken of the experience gained in connection with the original reduction plant to introduce such improvements in the new plant as will secure the most economical results. In addition to the above, projected improvements have been completed in the vicinity of the reduction works in the carriage and handling of material required for the company's operations.

During the half year the converters have turned out 2,858 tons of blister copper, or a total of 11,209 tons from the commencement of the company's operations.

Towards the close of the half year the Lyell Tharsis Mining Company forwarded, by means of its aerial ropeway, the first consignments of ore under the agreement entered into. This ore has been continuously treated since, is found suitable and yields satisfactory results as a flux for Mt. Lyell ore and acts as a profitable substitute for a portion of the barren flux now being specially quarried.

The result of operations, as indicated by the profit and loss account, has been satisfactory. The profit for the six months has amounted to £111,845 after deducting Tasmanian dividend tax (£5,699), depreciation of the company's plant other than the No. 2 reduction plant (£12,489), which latter was not completed at the end of the half year, and also the sum of £3,496 expended on mine exploration. Two dividends were paid, amounting to 4s. 6d. a share, absorbing a total of £61,417.

The cost of producing blister copper for the half year shows a reduction on the cost for the previous six months, notwithstanding that it is now calculated on the dry weight, which of necessity makes the cost

per ton somewhat higher than when calculated on the wet weight. This cost was, reduced to United States currency: Mining operations per ton of ore, $0.55; removal of overburden, $0.48; smelting operations, $3.91; converting operations, $0.47; total, $5.41.

The report of General Manager Robert Sticht shows that the blast furnaces treated during the half year 122,498 tons (dry weight) of material, made up as follows: Ore, 102,978; flue dust, 420; first matte, 16,302; converter slag, 2,465; linings, 333 tons. Of the ore 93,515 tons came from the open cut, and 9,463 tons from the underground workings. The average assay of the ore was 3.25 per cent. copper, 3.85 oz. silver and 0.114 oz. gold to the ton. The converting plant treated 5,357 tons matte—averaging 55.5 per cent. copper—producing 2,858 tons blister copper. The contents of this were 2,823 long tons fine copper, 336,053 oz. silver and 11,970 oz. gold. On the basis of 102,978 tons of ore, this gives an average result of 2.74 per cent. copper, 3.26 oz. silver and 0.116 oz. gold to the ton.

Manager Sticht's report further says: "Particulars of the new ropeway are the following: Main line from mine ore-bins to central station, horizontal length, 6,750 ft.; rise on mine side, 430 ft.; fall on reduction works side, 922 ft.; longest spans, 1,155 ft., 1,188 ft. and 1,320 ft.; length of branch to No. 1 plant, 300 ft.; length of branch to No. 2 plant, 890 ft.; capacity of carriers, one-half ton; speed of delivery about 1 ton a minute; entire quantity deliverable to either smelting plant; main line and both branches self-acting.

"As there is now only a comparatively small portion of the water required available by gravity from sources lying above the level of the works, the valley pumping plant has come into almost continuous use, and a duplicate set of pumping engines and water mains has been erected.

"Firewood is still being cut in quantity on crown lands along the main line of railway, but the old supply at Conglomerate Creek is largely exhausted. A large amount remains readily accessible at Ragged Creek, and the converting department will yet for some time to come be able to derive its requirements from the East Branch of the Queen River, while a new supply has recently been opened up along the Middle Branch. Wood fuel is at present the only kind in use for steam purposes at the smelting plants, but it is expected that a portion of the works may shortly be obliged to use coal as cheaper in consequence of the increasing cost of firewood carriage from localities offering a sufficient supply. In anticipation, regular coal supplies have been contracted for and a stock is being laid in. Proper coal storage bins are being erected on the slope between Nos. 1 and 2 smelting plants, convenient for unloading and for delivery to the power departments."

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Specially Reported for the Engineering and Mining Journal.

WHEN ENGINEER OF COAL MINE IS FELLOW SERVANT OF MINERS.—Under the common law rule as to fellow servants, an engineer of a mine, whose duty it is to lower the men to work in the mine, lift them out, and take out the ore, is a fellow servant of the miners. In an action for damages for personal injuries alleged to have been caused by an incompetent engineer employed by a mining company, evidence to show such incompetency seven years before the accident, taken in connection with proof of a series of acts of negligence tending to show his incomptency, extending over a long period of time, is admissible to show that the company knew, or should have known, of the incompetency of such engineer. Evidence that the general reputation of such engineer was that of a careless engineer is admissible as tending to show knowledge on the part of the company.—Stoll vs. Daly Mining Company (57 Pacific Reporter, 295); Supreme Court of Utah.

MINE-OWNER'S LIABILITY FOR INJURIES TO EMPLOYEE.—Where a fire is raging in the middle of a mine, while an employee is below the fire, it is the duty of the mine owner to telegraph to a distant city and hire a special train to obtain appliances with which to extinguish the fire, if such is the only means of saving the employee's life, as the rule of diligence, when life is at stake, requires the doing of everything that gives reasonable promise of its preservation, regardless of difficulties or expense. An employer's failure to use diligence in rescuing an employee in the mine under such circumstances is not excused by his acting pursuant to the unanimous opinion of other operatives. He is also liable for death caused by the failure of his superintendent to do what due diligence required of him, because he was acting under excitement. In an action for damages for putting plaintiff's minor son to work in a dangerous place, without her consent, whereby he was injured, the question of contributory negligence and negligence is immaterial.—Bessemer Land & Improvement Company vs. Campbell (25 Southern Reporter, 793); Supreme Court of Alabama.

ACQUISITION OF LODE CLAIM.—The laws of the United States (Revised Statutes, Sections 2,319, 2,320, 2,324), require that before the locator of a mining claim on public lands shall be entitled to same he shall have discovered on unappropriated land a mineral bearing lode, and shall have distinctly marked the boundaries of his claim, so that they may be readily traced; but the finding of the lode need not precede the staking of the claim, and hence, where a claim is located, and the locator afterward discovers a lode in same, before the claim has been appropriated by another, he has a valid claim to same. That part of the land on which a miner located a claim was patented to another without his objection does not prevent him from including the part unappropriated in another claim located on adjoining land, and obtaining a valid patent to the claim thus established. Under the constitution of Utah (Article 8, Section 15), requiring all actions to be tried in the county where they arose, an action to try title to a mining claim, located on land included in another claim on which the defendant entered, arose in the county where the land was situated and the entry made, and not in that where the land office in which such claim was filed was situated.—Erwin vs. Perego (93 Federal Reporter, 608); United States Circuit Court of Appeals.

THE BAUER BY-PRODUCT COKE OVEN.

The accompanying illustrations show a new form of retort oven devised by Dr. Von Bauer, which has been adopted by the firm of Fried, Krupp after a year's trial at the Hanover Colliery owned by the firm. It is described in a recent issue of "Stahl und Eisen." In the illustration Fig. 1 is a cross-section through the center; Fig. 2 is a longitudinal section; Fig. 3 is a section through the center; Fig. 4 is a section through the flues, Fig. 5 is a partial section, on a larger scale, through the top of the flues. It is known that most varieties of coal contain more gas than is required in order to transform them into coke; hence, not only is all the gas unnecessarily consumed, but also air is admitted towards the end of the process through the peepholes in the doors, which helps to lower the temperature at the expense of the charge—that is to say, that at the commencement there is too much gas and too little air, and at the end of the process the reverse condition obtains, notwithstanding that the whole of the gas is consumed. It is a very difficult matter to regulate the supply of air and give the proper dimensions to the gas flues. If, however, there is a means of supplying the gas in a uniform manner these defects are removed, and in addition there is a surplus of unconsumed gas, which is of more value than spent gas. The system under consideration enables one to heat the air in an equally uniform manner, and to increase the supply of air and gas as the increasing temperature of the oven renders it necessary, thus adapting itself to the exigencies of the coking process, which at first requires less and later more of air and gas.

The method can also be applied to the ovens with by-product recovery in which gas is delivered in uniform quantities from the gasometer.

A glance at the accompanying drawings, and the perusal of their description, will show that the Bauer oven can be worked (1) as an ordinary oven; (2) as an oven with condensing apparatus; (3) as an oven worked on the duplex principle, viz., of abstracting the gases during that period in the process when they are most rich in by-products, and allowing subsequently the less valuable gas to pass, without being cooled and afterwards rekindled, direct into the flues. By this method an economy of both heat and of gas is effected, and the cost of the by-product plant is reduced, as the hottest and poorest gas is not treated.

The Bauer ovens will take a charge of from 9 to 10 tons, and the average coking time is from 30 to 36 hours. Considering their output it is claimed that they occupy less space, and the cost of working is less than is the case with some of the other systems.

The ovens are filled through the charging holes (A), unless it is preferred to introduce a pressed or pounded cake of coal with the aid of machinery, and thus do away with these apertures.

1. When used without by-product recovery the valves to the exhauster are closed and the stones that close the main flues are open. 2. When used with by-product recovery apparatus the valves to the exhauster are open, and the stones that shut the flues are down. 3. The duplex principle of working is when methods 1 and 2 are combined, viz., at first with and afterwards without by-product recovery. When the oven is without the by-product system the gases reach the main flues, d, through three apertures, C, and from these pass on to the combustion flues, E. With the by-product recovery plant in operation, the purified gases from the gasometer pass into the mains, and from thence into the flues through six openings. With the union of the two methods, the gases from the gasometer mix with those of the ovens in which the exhauster is not working, and then flow into the flues through six apertures. In each case the flues receive gases or gas mixtures of uniform composition—either the crude gas disengaged at each particular phase of the coking process, or the return gas, or else the return gas mixed with the gases of the ovens that are in operation.

The gases enter at the top ends of the ovens, pass downwards, then underneath the bottom of the flues, then upwards, and finally, having received an addition to their quantity from the mains, pass once more in a downward direction in order to reach the bottom flue, situated in the middle of the oven, and thence flow to the boilers through the outlet pipes. The ovens operate therefore on both sides—namely, from the ends towards the center—and there are on that account two inlets for the gas. Below the combustion flues there is situated, between the air flues which are underneath the bottom flues of the oven, a main air flue; this receives from outside and from the air flues both cool air and hot air. This air passes up through airways which are located between the combustion flues, and, then through certain small ports, reaches the gases, which, from the main flues have passed into the chamber above the gas flues. The coal in the oven is on a level with this chamber where the gas and air are commingled. In places where the gases flow in a downward direction the previously heated air is introduced through small holes underneath the flues, and in order to admit fresh air certain small air passages are effected in the top of the oven or of the air chambers.

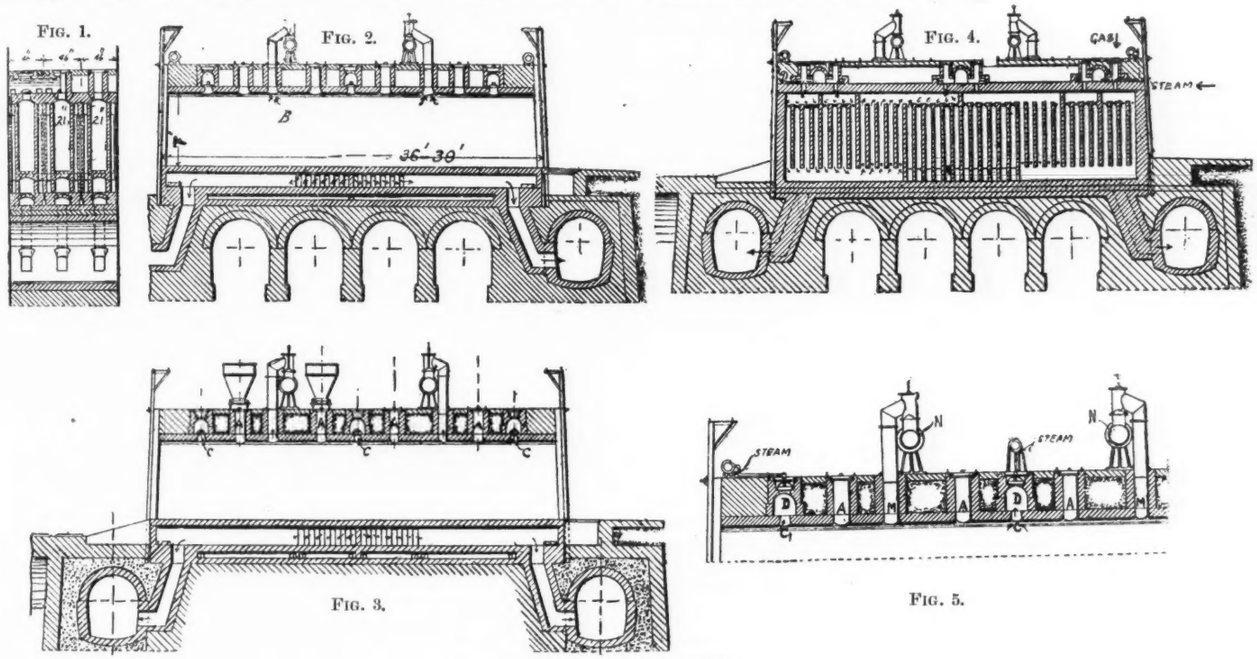
In each half of the oven in the gas flues the fresh air is admitted from below twice and emitted from above as hot air, and once from above to be emitted below in the same condition. Those surplus gases which are not consumed in the combustion flues pass direct from the mains, previous to ignition, into a transverse duct, which for every 10 retorts connects the three mains together, and from this duct passes through the main outlet to the boilers, or reach the latter by a separate conduit in order not to become mixed with the spent gases. Parallel with the return gas pipes there run steam pipes for the purpose of moderating, in case of necessity, any excessive temperature in the gas mains, or in order to maintain any particular degree of heat that may be desired. These pipes, which are of small diameter, and are placed above the oven, are furnished at certain intervals with nozzle-shaped branches, furnished with taps, that lead into the mains. The position of these steam pipes is shown in the elevation, although they are too small to be distinctly indicated.

The battery of Bauer ovens consists of eight, with a capacity of 9 tons. The coal used contains 12 per cent. of water and 67 to 69 per cent. of fixed carbon and ash. The coke yield was, taking the average of the year during which the ovens were worked experimentally, 73.2 per cent. Batteries of some other systems in the vicinity were worked

with precisely the same coal, and the highest yield of the old or the most recent ovens was 68 per cent.

The normal coking time for one of Bauer's ovens is 30 hours. For about two months it was from 32 to 34 hours, and for the rest of the time—as special men were not told off to attend to so small a battery—the time has been 48 hours; as soon, however, as the new installation is complete the period of 30 hours will be adhered to.

An oven with 48-hour charges will yield in one year (360 days) 1,186.5 metric tons of coke, and with 30-hour charges it will yield 1,898.4 tons of coke—that is, when worked without by-product apparatus. The theoretical yield of coke has been given above as 67 to 69 per cent., or as smaller than the actual. Such discrepancies are, however, not infrequent. At Creusot, in Bauer's vertical ovens, working with a mixture of coal and anthracite, we have a yield of 81½ per cent., although theoretically the coke contents are put down as 82 per cent.; at the Hannover Colliery we have a yield of 4 per cent. above the theoretical one as before stated, namely 73.2 per cent. It is, therefore, not correct to merely indicate the charge for 24 hours in instituting comparisons. The excess of over 4 per cent. above the theoretical yield has been maintained by Bauer's ovens regularly throughout the whole time they have been in operation—that is to say, for about 15 months; and these figures are not simply the result of an analysis effected in the laboratory, but have for their basis the total amount of the coke production since the ovens started working. At the Hannover Colliery Professor Dr. Kassner, Dr. von Bauer and others, are of opinion that this excess in the yield is due to the precipitation of volatile carbon, which is absorbed by the glowing coke in the last stages of the process. Notwithstanding the experiments of Kassner, many are skeptical on this point,



THE BAUER COKE OVEN.

and further investigations are to be made. The fact of this excess of the yield above the estimate is, however, well established.

The advantages claimed for these coke ovens are the surplus of gas unconsumed, the smaller space that they occupy, the low working expenses and the absence of any smoke.

GERMAN IRON ORE TRADE.—For the half year ending June 30th imports of iron ore into Germany were 1,761,567 metric tons, against 1,477,553 tons in 1898. Exports were 1,578,143 tons, against 1,476,014 tons last year.

GERMAN IRON PRODUCTION.—The production of pig iron in Germany in July was 685,434 metric tons, being 22,019 tons more than in June, and 64,850 tons more than in July, 1898. For the seven months ending July 31st the output was: Foundry iron, 832,827 metric tons; forge iron, 981,914 tons; Bessemer pig, 306,330 tons; Thomas (basic) pig, 2,564,796 tons; total, 4,685,858 tons, showing an increase of 466,533 tons, or 11.1 per cent., over last year.

ONTARIO IRON ORE SHIPPED TO SCOTLAND.—Some 100 tons of ore have been shipped from the Belmont Iron Mine, Ontario, to Glasgow, as an experiment, besides a few car loads to local furnaces, says the London "Iron and Coal Trades Review." An order was lately received for 20,000 tons by cable from Germany, and, as the ore is of special high grade quality, as soon as the St. Lawrence canals are enlarged, if the high prices of ore continue, the Belmont ore may, it is thought, be profitably shipped to Europe. The quality can be judged by the following analyses made of ore recently mined: Samples from Nichol Pit, alongside of the railway track: Metallic iron, 65 per cent.; phosphorus, 0.013 per cent.; sulphur, 0.10 per cent. Other samples from Nichol Pit showed: Metallic iron, 64.88 per cent.; phosphorus, 0.003 per cent.; sulphur, none; silica, 5.11 per cent.

TIN MINING IN TASMANIA.*

Up to the end of 1897 Tasmania produced 80,000 tons of tin, valued at £6,500,000. Of this, one mine, the Bischoff, contributed about £2,700,000. This mine is situated on an elevation known as Mount Bischoff. On the south or working side the ground rises with a gentle slope to the summit, where it falls steeply into the valley of Arthur River. The mine is worked in three open faces or quarries: The Brown Face, the Slaughter Face and the White Face.

The Brown Face forms a semicircular quarry over 700 feet in length from end to end. The ore consists of brown oxide of iron, gossan, easy to pick down, and carrying 3 per cent. of black tin; it is at precent 110 ft. deep and has been further proved to a depth of 260 ft. Below the present working floor thin veins of cassiterite and masses of tin and iron pyrites take the place of the iron oxide found on the surface.

The Slaughter Face is of a similar character; its full length is 1,000 ft. and it is opened for about half that distance and about 150 ft. in depth. This deposit is 230 ft. wide and the quantity of ore still to be taken out represents over a million tons.

The White Face is an alluvial deposit, 1,500 ft. in length from east to west, and 400 ft. from north to south. It averages at present about 30 ft. deep, sloping upwards from a few inches to 70 ft., and carries 2¾ per cent. of black tin.

Mount Bischoff may be described roughly as a mountain of slate and sandstone intersected by a great dyke of quartz porphyry running northeasterly, with numerous branching dykes. In some places the main dyke consists of topaz-porphyry; it carries most of the tin, the branching dykes being barren.

Seven miles of water races have been constructed and 11 dams of 800,000,000 gallons total storage capacity. This work has been accomplished under difficulties, for the mine is higher than most of the surrounding country.

QUESTIONS AND ANSWERS.

(Queries addressed to this department should relate to matters within the special province of this periodical, such as mining, metallurgy, chemistry, geology, mineralogy, machinery, supplies, etc. As it is manifestly impossible to devote space to all the questions and notes constantly received, preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot here undertake to give professional advice on problems requiring special investigation and which should be obtained from a consulting expert. Nor can we undertake to give advice about mining companies or mining stocks. Brief replies to questions will be welcomed from correspondents. While names will not be published, all inquirers should send their names and addresses. Anonymous questions will not be answered. Preference will, of course, always be given to questions submitted by subscribers.—Editor E. & M. J.)

Iron Ore Specimens.—What is the specimen I send?—C. M. H.

Answer.—It is iron ore, in what is called the botryoidal form, and as it gives a brownish streak, is limonite.

Vanadium Ore—What are the uses of vanadium and where is there a market for the ore?—C. W. W.

Answer.—The uses of vanadium are few and the market is limited. You will find particulars in Vols. VI. V. and II. of the "Mineral Industry." It has been tried experimentally as an alloy for steel for armor plate and ordnance . This use may grow. Its salts are used in making a most intense black, used as a dyestuff and for ink. Poulot & Voilleque of Denver, Colo., deal in vanadium ores and alloys.

* From a paper on the "Mineral Resources of Tasmania," read before the North of England Institute of Mining and Mechanical Engineer by John J. Sanderman.

Columbite.—Is there any market for the mineral columbite, containing 50% niobium?—I. A.

Answer.—Niobium is one of the elements that, while rated rare, is of fairly wide occurrence, associated with tantalum and venadium. In the metallic form it is simply a curiosity for the chemist's cabinet. The demand for columbite would be from museums and mineralogists and the value would be determined by the quality of the specimens. An advertisement in our columns would doubtless bring buyers.

Treatment of Antimony Ores (Sulphides).—In answer to the question submitted by H. C. in the "Engineering and Mining Journal," July 15th, 1899, page 63, a correspondent, M. P. L. Burthe, of Paris, writes as follows:

Answer.—I would like to inform H. C. that for some twelve years past antimony ores of the class which he describes have been treated in France by a method which may be briefly outlined as follows: The ores are calcined in a furnace which resembles somewhat the old and well-known lime-kiln ("fours a chaux"), with free access of air. A hood is supplied with a blower, which sends the vapors from the furnace into condensing chambers, where the fumes of oxide of antimony are condensed and collected. The fumes may be condensed dry or in water, according to circumstances, or as preferred.

Manganese Ore.—Does manganese ore occur in a stratified form? In what rock formations is it found in the United States?—J. R. C.

Answer.—Manganese ore occurs in formations of all ages, from the bog manganese deposits of recent time to the ore bodies found in Precambrian rocks. The ores have been formed in widely different ways; they occur sometimes as sedimentary deposits and are sometimes replacements of other minerals. There are managanese mines in Virginia, and other Southern States, and in Arkansas. Manganese is also obtained as a by-product of the New Jersey zinc mines and occurs in large quantities in certain of the silver-lead mines of Leadville, Colo. Iron ore with a low percentage of manganese is found in the Gogebic Range, Mich. In the "Mineral Industry," Vol. VII., and previous volumes, you will find full statistics of production.

Spelter and Zinc Ore Prices.—Can you tell me how zinc production compares with consumption, and why is the price of that ore in Missouri steady while spelter is weak?—T. C.

Answer.—The production of zinc ore in the Joplin District in 1890 was 122,850 short tons, in 1895 140,000 tons, and in 1898 235,070 tons. The consumption of spelter was approximately 66,430; 80,720; 105,000 short tons. In general, the price of zinc ore is determined by the price of spelter. In Missouri the zinc smelters were accustomed to buy ore pretty much at their own figures, as the miners had limited resources and needed cash payments to keep going. The Missouri and Kansas Zinc Miners' Association, however, has now fixed scale prices for zinc ores, based on the market price of spelter. The buyers for the smelters have bid above and below the scale figures, but the Association, by refusing to sell for less than the scale, and by restricting production, has obliged the smelters to pay its rates. The smelters are reported to be looking for new sources of supply, but so far the association has had the advantage.

PATENTS RELATING TO MINING AND METALLURGY.

UNITED STATES.

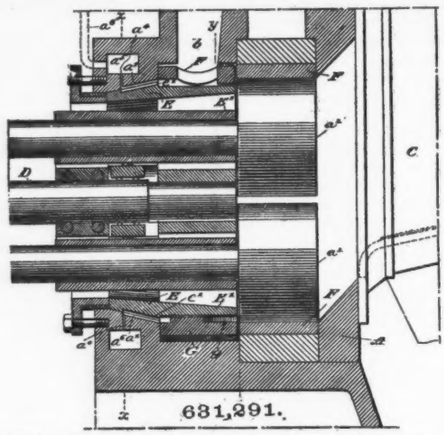
The following is a list of the patents relating to mining and metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Ending August 22d, 1899.

631,281. MACHINE FOR FORGING AND SHARPENING ROCK-DRILLS. William Daly, near Johannesburg, South African Republic. An improved drill-sharpening and forging machine comprising the framework, the horizontally-sliding block carrying a sharpening-die with means for operating the block, the hammers movable radially in guides in the framework, springs tending normally to force the hammers outward, inclined toggle-arms seated between the hammers and the framework and toggle-arms between the sliding block and hammers.

631,298. ROTARY DRIER. Levi Grill, Cleveland, O., assignor of one-half to C. O. Bartlett & Co., same place. In a mechanical drier, the combination with a heating-chamber of rotary drying-chambers, within the heating-chamber, the drying-chambers, being segmental portions of a cylinder, open at either end, and separated from each other by communicating radial passages, for hot air, supports connecting the segments together at either end about a common axis, and a trunnion secured to each support in line with the cylinder-axis.

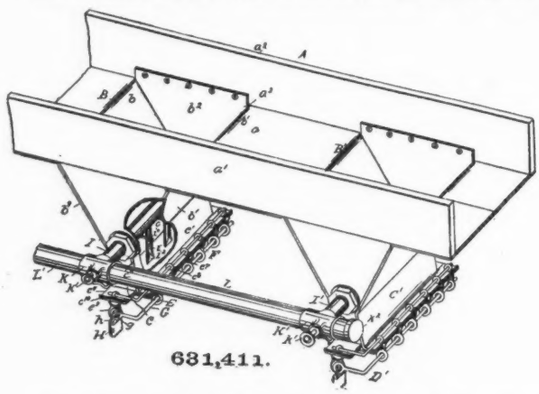
631,291. PULVERIZING MACHINE. Gideon Frisbee, Philadelphia, Pa. A die, a crushing-roller, a rotatable disk back of the die and closing end of the pulverizing-chamber against the discharge of pulverized material, grooves formed in the periphery of the disk, an external casing around the pulverizing-chamber and disk, grooves on the interior surface of the external casing adjacent to the grooves in the disk, the former grooves being arranged at an angle relatively to the latter.



631,320. CAISSON. John F. O'Rourke, New York, N. Y. A caisson comprising vertically-disposed timbers fitting closely together, internal bands to which the timbers are secured, an angle-iron band upon which the ends of the timbers rest, and a vertical band secured to the angle-iron band and to the ends of the timbers.

631,322. OXIDANT FOR ELECTRICAL BATTERIES. Leonard Paget, New York, N. Y., assignor to the Reliance Lamp Electric Company, of New Jersey. The method of manufacturing positive electrodes for storage batteries consists in placing a mass of lead of convenient form in an electrolyte consisting essentially as to its active agent of a peroxide of chlorine dissolved in a strong solution of sulphuric acid of good conductivity, making this mass the anode for an electric current, and adjusting the current so that a potential difference of about three volts is established between the anode and a cathode of lead.

631,411. ORE CONCENTRATOR. Ephraim C. Sooy, Kansas City, Mo. A receptacle for ores having sides and outwardly-extended flanges upon the lower portions of the sides a detachable bottom to the receptacle, a hinged connection of one side of the bottom with one side of the receptacle, the free edge of the bottom and the adjacent flange



on the receptacle having openings registering with each other, a clamping-nut opposite each of the several openings having a ring integral with the nut, an eyebolt in each opening within its respective nut, a link connecting one of the clamping-nuts with another and a separate link connecting one eyebolt with another and a locking device connected with each link.

631,414. METALLURGICAL FURNACE. Joseph A. Anker, Los Angeles, Cal. Combination of the series of movable heart-sections forming the bottom of the combustion-chamber, each having a discharge-port and adapted to move longitudinally through the furnace, casing, A, having side projections adapted to project over the side edges of the hearth-sections, door in the rear end of the furnace adapted to be opened to permit of the passage into the furnace of the hearth-section, door in the front end of the casing adapted to be opened to permit of the passage out of the furnace of the hearth-section, door in front end of the casing and door in the side of the front end of the casing both adapted to be opened to inspect the ore in the hearth-section, and to permit the passage therethrough of more ore or flux into the hearth-section if needed; door in the side of and in the front end of the casing adapted to be opened to permit of the drawing off of the contents of the hearth-section, before the same is removed from the furnace, openings in the front end and in sides of the front end of the casing above the hearth-section, adapted to permit the passage therethrough of the burners, stack at the rear end of the furnace, with burners adapted to pass through the openings and discharge a blast-flame into the ore in the hearth-section in the front end of the furnace.

631,422. MEANS FOR OPERATING BRICK-PRESSES. James M. Ervin, Cleveland, Ohio, assignor to Ervin Special Machine and Tool Company, same place. In a press, the connecting-rod provided with seats in its opposite edges to receive the shafts, and the shafts which fit in the seats, combined with the toggle members which are made separate from the shafts, and provided with flanges upon their ends, and suitable bolts which are passed through the flanges into the shafts.

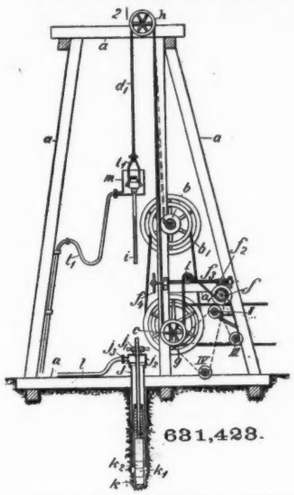
631,423. RIG FOR BORING WELLS. Albert Fauck, Marcin-Kowice, Austria-Hungary. Combination with a derrick, a revolving crank-shaft journaled in the same, a pulley loosely mounted to the crank-pin, a guide-pulley mounted upon the top of the derrick, and a rope running from a fixed point of the derrick above the crank-shaft around the crank-pin pulley and guide-pulley of a tubular drill-rod, a tubular bit having on its circular cutting-face radial cutting edges, which are outwardly extended on two diametrically opposite portions of the said cutting-face, reaming-blades pivoted to the bit, a tubing closed at its top and means for forcing water into the tubing.

631,460. APPARATUS FOR WASHING AND PURIFYING GAS. Evan Evans, Llanrwst, England, assignor to the Imperial S. C. Acetylene Gas Company, Limited, Manchester, England. Combination of a tank or receptacle; an open-ended chamber extending into the upper portion of said tank; independent layers of gauze or the like

secured in the lower open end of the cylinder; a gas-inlet to the tank; and a gas-exit for the cylinder.

631,469. CENTRIFUGAL PUMP. Fritz G. Lundwall, Helleforsnas, Sweden. Combination with a suitable pump body or chamber, of a duplex centrifugal pumping-wheel organized to draw different fluids from different sources of supply outside of the pump-chamber and force them into the latter and having separate passages in communication with the sources of supply, the passages terminating in circular concentrically-disposed discharge-nozzles.

631,471. MOLD FOR CASTING ANODES. John T. Morrow, Great Falls, Mont. A mold having at one or more points a low dam or wall, an extension lying outside the low dam or wall ar " a clip-holding de-



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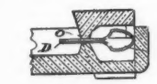

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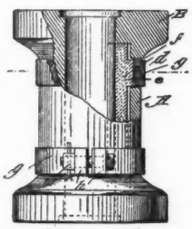


631,535.

vice supplementing the said low dam or wall and fitted to the extension to register accurately in position therewith, the mold being entirely open and without top in the vicinity of the clip-holding device.

631,493, 631,494. SAND-MOLDING APPARATUS. Stephen J. Adams, Pittsburg, Pa. The combination of a jarring-table, a pattern, a flask and sand-reservoir and a pliable follower adapted to enter the reservoir.

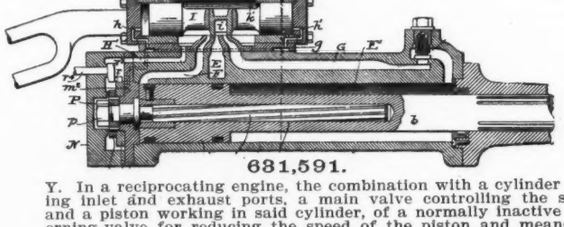
631,504. OIL OR ARTESIAN WELL DRILLING AND PUMPING RIG. Charles C. Howell, Bradford, Pa., assignor of one-half to Robert Roy, same place. Combination with the embedded main sill and subsill, of the samson-post consisting of a timber of rectangular form provided with a tongue, and the iron plates provided with foot-pieces, and the jack-posts consisting of one timber each of rectangular form provided with a tongue, and the plates provided with foot-pieces.

631,517. EXPANSION ROCK-REAMER. Otto G. Worsley, Newark, Ill. Combination with a stock having an end socket, and a blade having a shank for entering the socket, and an annular shoulder adapted to abut against the end of the stock and a cutting edge projecting laterally beyond the periphery of the stock when the shoulder is adjusted to the stock end, of flexible connection between the blade and stock, whereby the blade may swing inwardly and away from the stock end, and means for extending the blade laterally.

631,535. TAPPET FOR STAMPING-MILLS. George W. Waitt, San Francisco, Cal. A tappet having an interior chamber or recess in its wall, and a groove around it with an opening from the recess to the groove, a gib having a stud or boss projecting into the groove, a band in the groove and mechanism for drawing upon the band and causing it to press upon the gib, the parts being constructed and combined.

631,536. MEASURING INSTRUMENT. William B. Bradsby, Greenville, Ill., assignor of one-half to Edmond De Moulin and Ulysses S. De Moulin, same place. The combination of a try-square, a movable arm comprising a straight-edge pivotally mounted upon the try-square, with its pivotal point adapted for adjustment in a direction parallel to a line bisecting the angle between the blades of the try-square, and means for securing the arm at the desired adjustment.

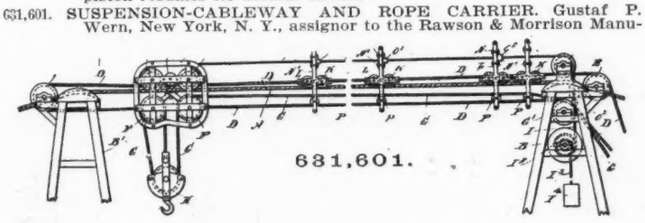
631,591. COAL-CUTTING ENGINE. Henry C. Sergeant, Westfield, N. J., assignor to The Ingersoll-Sergeant Drill Company, New York, N.



631,591.

Y. In a reciprocating engine, the combination with a cylinder having inlet and exhaust ports, a main valve controlling the same, and a piston working in said cylinder, of a normally inactive governing-valve for reducing the speed of the piston and means for actuating the governing-valve when the piston moves beyond the normal working point and for rendering it inactive when the piston resumes its normal stroke.

631,601. SUSPENSION-CABLEWAY AND ROPE CARRIER. Gustaf P. Wern, New York, N. Y., assignor to the Rawson & Morrison Manufacturing Company, Cambridge, Mass. A device provided with a carriage, a hanger-rope having one end attached to the carriage, a series of clamps secured and spaced on the hanger-rope, hangers for supporting the hanger-rope, a hoisting-rope, adapted to be engaged by the clamps, to move the hangers successively along as the carriage proceeds on its outward journey, and a weight-driven drum, for automatically winding up the hanger-rope when the carriage returns.



631,601.

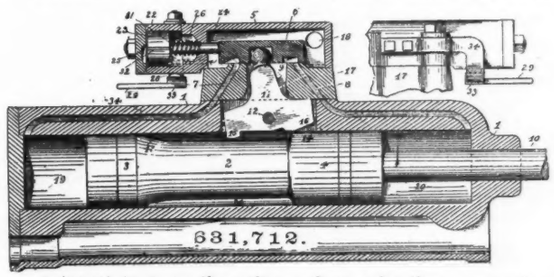
631,612. APPARATUS FOR EFFECTING COMBUSTION OF LIQUID FUEL FOR FURNACES OR THE LIKE. John S. V. Bickford, Camborne, England. An apparatus consisting of a chamber having a refractory bed and an opening at one side, an air-supply pipe projecting into the chamber at the opposite side and constructed at its inner end portion with a longitudinal slit in its under side, a contracted orifice and a slit leading from the contracted orifice to said longitudinal slit, and a liquid-fuel-supply pipe terminating in a bend which delivers the liquid fuel upon the inner end portion of the air-supply pipe.

631,630. BRICK-MACHINE. James Garrett and James H. Welch, Monaca, Pa. A brick-machine attachment, comprising an upwardly-yielding table, and a cut-off device for removing surplus material from molds, the surplus material passing upon the table, a space being provided beneath the table to permit the passabe of the filled molds.

631,680. MINERAL EXTRACTING MACHINE. Karl Stahlgren, Salinas, Cal. In a centrifugal mineral-extractor, in combination, a stationary cylindrical vessel, provided with an annular outer chamber surrounding the same, a cover for the vessel, having a central receiving-nozzle and depending cylindrical tube concentric with the stationary cylindrical vessel, an annular removable pan in the bottom of the annular outer chamber, an annular depending curtain having inturned flanges, a revoluble cylindrical vessel within the stationary vessel and concentric therewith, means for rotating said revoluble vessel on its true axis of mass, and a removable thin metal lining, outturned at top, within the revoluble vessel.

631,701. AIR COMPRESSOR. Charles F. Du Bois, Denver, Colo. Combination of a pair of disks, eccentrically-disposed cylinders therebetween, and fitted air-tightly thereagainst, and means for rotating the cylinders; with collapsible partitions between the cylinders and the disks, whereby contractible and expansible air-compressing chambers are formed between the cylinders and disks.

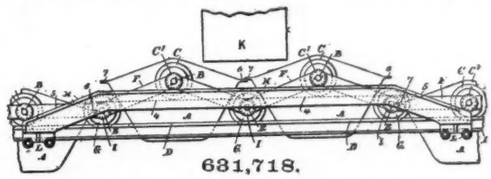
631,712. ROCK-DRILLING MACHINE. William Gleeson, Unga, Alaska. Combination of a main cylinder, a piston, a distributing slide-valve,



631,712.

a tappet to move the valve each way by the movements of the piston, a stem bearing against one end of the valve, and means for applying elastic pressure at will to the stem, whereby short or long strokes of the piston may be produced at will.

631,718. CONVEYOR FOR COAL, ORE, ETC. Charles W. Hunt and Charles C. King, New York, N. Y., assignors to the C. W. Hunt Company, same place. The combination with the buckets and their connecting-chains, tracks and supporting-wheels in a conveyor, of mechanism for moving the links of the chain into angular positions



631,718.

between the pivots of the buckets and thereby drawing one bucket toward the other bucket and bringing the edges of the buckets sufficiently closely adjacent to prevent the coal or other material falling down between the buckets.

631,719. REFRACTORY MATERIAL. Alexander Imschenetzky, St. Petersburg, Russia. The process consists in first saturating articles made of asbestos with an alkaline solution holding free silica in suspension, and then treating the same with a bicarbonate solution in order to deposit the silica from the unconverted silicate contained therein.

631,732. COMPRESSED-AIR PUMP. Thos. C. Wristen, Dighton, Kan. The combination with the reservoir provided with the inlet-valve, the valve discharge-pipe communicating with the reservoir, of the air-compression cylinder, the pipe connecting said cylinder and reservoir, the valve-casing fived within the reservoir and encompassing the lower end of the pipe, the valve spring and disk located within the casing, and the set-screw mounted in the casing and coacting with the disk and spring to close the valve, the casing, the disk, and the float mounted therein, the casing, the valve mounted therein, the rod connecting the valve and disk, and the air-pipe extending from a point above the water-level, terminating in the reservoir, and in the path of the valve.

GREAT BRITAIN.

The following is a list of patents published by the British Patent Office on subjects connected with mining and metallurgy.

Week Ending July 29th, 1899.

14,523 of 1898. ZINC-LEAD FURNACE. H. R. Angel, London. Construction of furnace for the inventor's process of treating zinc-lead sulphides and recovering caustic soda.

16,312, 16,388 of 1899. TREATMENT OF ZINC-LEAD SULPHIDES. J. Armstrong, London. Modifications on the inventor's process for treating zinc-lead sulphides and its special application for zinc alone.

17,759 of 1898. PULVERIZER. B. Moustier, Valdoune, France. Pulverizers in which the force of production of pieces of the material against one another is used to help the crushing.

23,079 of 1898. UTILIZATION OF BLAST FURNACE BY-PRODUCTS. E. Disdier, Bilbao, Spain. Plant for utilizing the heat and by-products of blast furnace and coke oven gases.

1,216 of 1899. LOCKING DEVICES FOR MINERS' SAFETY LAMP. W. Debus, Oberhausen, Germany.

PERSONAL.

Mr. Victor M. Clement is in Chihuahua, Mexico, on professional work.

Col. George W. E. Dorsey returned to Salt Lake City 10 days ago from a 2 months' visit in the East.

Mr. Titus Ulke has been appointed assistant inspector of powder at the Frankford Arsenal, Philadelphia.

Mr. O. P. Posey devoted this week to Utah mining interests and will probably go from Salt Lake City to New Mexico.

Mr. E. A. Downey has succeeded Mr. Edward W. Coit as manager of the St. Louis branch of the National Tube Company.

M. Paul de Sincay, of the Vielle-Montagne Zinc Company of Belgium, sailed from New York for Europe on September 1st.

Capt. J. D. De La Mar, accompanied by Mr. Hartwig A. Cohen, his chief of staff, left Salt Lake City last week for De Lamar, Nevada.

Messrs. Thomas J. Dee and Herbert W. Fox have formed a partnership under the name of Thomas J. Dee & Company, and opened an office in Chicago, as gold and silver refiners and assayers.

Mr. R. M. Bird, of the Exploration Company, Limited, arrived at San Francisco from New Zealand a fortnight ago. On his way eastward he gave 4 days to Utah, his stay being cut short by a call from London.

Prof. George Lunge of Zurich, Switzerland, the distinguished German chemist, arrived in New York September 2d, and will remain here some time. He is engaged in professional work for some of his clients.

Mr. R. R. Moore, the Colorado representative of the St. Louis Smelting and Refining Company, who spent part of August in New York and St. Louis, returned to Leadville September 1st. Mr. Moore has the credit of starting zinc shipments from the Leadville district.

Mr. Julius Herlitschka, manager of the Vienna branch of the firm of White, Child & Beney, importers of American machinery and tools, is in this country and will, in addition to opening some new business connections, attend the Philadelphia Export Exposition as a delegate of the Vienna Chamber of Commerce.

We want the present address of a certain J. H. Smith, who, we believe, was also known under the name of Geo. Ryall, of Kalispell, Montana. Said Smith was in New York in March, 1899, and was heard from in Portland, Oregon, in April. We shall be greatly obliged to any of our readers who can send us any information as to his subsequent movements or present whereabouts.

OBITUARY.

Charles L. Bailey, aged 78, president of the Central Iron Works, and one of the most prominent ironmasters in Central Pennsylvania, died September 5th at Harrisburg. He was a member of the Legislature in 1879 from Dauphin County, and trustee of the Harrisburg Insane Hospital. He is survived by a widow and 5 children.

Charles Yandes Wheeler, president of the Firth Sterling Steel Company, died September 5th of Bright's disease, at his home in New York City. Mr. Wheeler was born at Greencastle, Ind., in 1843, and served in the Union Army during the civil war. He invented the projectile which is almost exclusively used in the United States Navy to-day and after 4 years of experimenting he sent 40 to the Annapolis proving ground before Gen. Benjamin F. Tracy, then Secretary of the Navy, placed an order for 100 6-inch shells. A subsequent order for $350,000 worth of shells was filled and since then many others. He is survived by his widow and 5 children.

SOCIETIES AND TECHNICAL SCHOOLS

Michigan College of Mines.—The 12th annual commencement exercises were held at Houghton on August 29th. Twenty-six young men took the degree of bachelor in science and engineering. Capt. W. E. Parnall, of Calumet, superintendent of the Tamarack Mining Company, made a stirring address to the young men, urging them to become masters of the practical details of mine management by working as miners for a time.

INDUSTRIAL NOTES.

The Webster, Camp & Lane Company of Akron, O., is shortly to build an addition to its machine shops.

The Edward P. Allis Company, Milwaukee, Wis., has leased the Lake Erie Engineering Works at Buffalo, N. Y., and has started 500 men at work there.

At the Hellertown furnaces of the Thomas Iron Company arrangements are being made to install a pig iron casting apparatus made by Messrs. Heyl & Patterson of Pittsburg.

The Minneapolis, Minn., plant of the Republic Iron and Steel Company is now making open-hearth steel and has ceased to put out bar iron, the whole capacity of the mill being devoted to bar steel.

The officers of the Roane Iron Company at Chattanooga, which owns the furnace at Rockwood, announce that they have begun the erection of another large furnace, costing $200,000.

The Link Belt Machinery Company of Chicago recently shipped an order of machine trippers to England for handling grain in the warehouses of the Liverpool Grain Storage and Transit Company.

Some recent sales made by the J. H. Montgomery Machinery Company of Denver, Colo., were: Excelsior Gold Mine, British Columbia, a Common Sense whim, wire rope, etc.; an order from the Arizonta Copper Company of Clifton, Ariz., for ore cars; Grand Encampment Mining and Milling Company of Wyoming, a number of ore cars.

The explosion at the Republic Iron Works, of the National Tube Company, at Pittsburg, Pa., last week, was not as serious as was at first supposed. About half of the plant went in operation this week, but the remainder of the works will not be in shape to start for a week or two. The company has been able to secure some material and has not been seriously handicapped by the loss of the material from the damaged plant.

The Sterling White Lead Company of Pittsburg, Pa., has increased its capital from $200,000 to $500,000, and will, it is stated, erect an additional corroding house at its works at New Kensington. The new corroding house will be a duplicate of the old one, which contains 34 corroding beds, with a capacity of 60 tons of pig lead each every 100 days. The corroding department will be equipped with electric traveling cranes, each with a capacity of three tons, to facilitate charging and discharging the beds.

In the United States Circuit Court of Appeals at Philadelphia, Judge Kirkpatrick recently delivered an opinion dismissing the bill in equity of the Carnegie Steel Company, limited, against the Cambria Iron Company. The Carnegie Company asked that the Cambria Iron Company be enjoined from using a process said to be identical with the rights of the Carnegie Company under the Jones patent for mixing molten metals to secure uniformity in the product. Judge Kirkpatrick held that the Carnegie patent was anticipated by previous American and English processes.

The Henri Nestle Company is establishing a large plant at Fulton, N. Y. This firm has its headquarters at Vevay, Switzerland, and before establishing its plant in America constructed a similar plant in Sweden. The plant at Fulton, N. Y., will be fireproof, and of the most modern construction, using steel framework for the floors and roofs, with brick side walls, the floors being of concrete supported by steel beams. The Berlin Iron Bridge Company of East Berlin, Conn., furnished and erected all the steel structural work connected with this building, under the supervision of H. J. White, consulting engineer for Henri Nestle.

Another deal is projected in the brick trade, this time a consolidation of firebrick manufacturers of Kentucky and Ohio into a $5,000,000 company. The following concerns are said to be interested: Portsmouth Firebrick Company, Portsmouth, Ky.; Ironton Firebrick Company, Ironton,O.; Parker & Austen Firebrick Company, Ironton, O.; Petersburg Firebrick & Tile Company, Coal Grove, O.; Olive Hill Firebrick Company, Oak Hill, O.; Aetna Firebrick Company, Oakland, O.; Scioto Firebrick Company, Scioto, O.; Webster Firebrick Company, South Webster, O.; Ashland Firebrick Company, Ashland, Ky.; Kentucky Firebrick Works, Firebrick, Ky.; Scioto Star Firebrick Works, Portsmouth, O.; and Clinton Firebrick Works, Ashland, Ky.

Another attempt is to be made to combine all the car and engine brass manufacturers of the country; an effort made last May ended in a failure of the promoters to float the company. The new company, it is said, will have at least $5,000,000 capital and will be known as the American Brass Company. All the important concerns in the country as far west as Chicago, about 15 in number, will be included, with the possible exception of the newly formed Atlantic Brass Company of Jersey City. The more important companies on which it is understood options will be secured are: Brady Metal Company, New York; Buffalo Brass Company, Buffalo; Ajax Metal Company, Philadelphia; Hewitt Manufacturing Company, Chicago; Moore, Jones & Company, St. Louis; Damascus Bronze Company, Pittsburg; United States Bronze Company, Cleveland; Fulton Brass Company, Detroit, Mich. It is said that President Hewitt, of the Brady Metal Company, of New York City, as well as the Buffalo Brass Company, two of the largest plants in the car brass business, is a prime mover in the new project.

TRADE CATALOGUES.

Among the numerous pamphlets sent out by the Joseph Dixon Crucible Company of Jersey City, N. J., one of the most interesting is entitled "Brazing by Immersion." Its 40 pages, illustrated by numerous half-tone cuts, give a clear idea of the merits of this method of brazing and the points of superiority claimed.

"The Diamond Drill" is the title of a comprehensive 80-page catalogue published by the M. C. Bullock Manufacturing Company of Chicago. Starting with a brief summary of the uses of the diamond drill, the catalogue points out the general features of the Bullock drills and their many points of merit, such as the compact, balanced engines, the patent swivel head, etc. Particular attention is called to the screw feed device and thrust indicator fitted to the large size drills, by which it is possible to tell when a drill, after passing through hard rock, strikes "gouge," or a soft vein or seam, without lifting the drill; this feature is valuable in prospecting for precious metals, coal or salt. The smallest of the company's drills, the "Bravo," for hand power, has its drill spindle in front of the columns, greatly facilitating handling the rods; its total weight is 325 lbs., and it can be divided into 40 lb. packages; its capacity is 250 to 300 ft. The heaviest drill built by the company, the "Jumbo," is a very powerful affair designed to bring up a 2 in. core from the great depth of 6,500 ft. The catalogue contains bits, etc., and a lot of information on costs of drilling, etc., together with numerous testimonials.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information concerning goods of any kind and forward them catalogues and discounts of manufacturers in each line.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying and selling goods of any kind.

GENERAL MINING NEWS.

ALASKA.

Douglas Island.

Alaska Mexican Gold Mining Company.—This company reports for July 14,058 tons of ore crushed, the gold return being $20,512, or $1.46 a ton. Of the bullion $7,723 came from concentrates (sulphurets) treated. The expenses were $18,849, or $1.34 a ton; leaving a balance of $1,663, or $0.12 a ton.

Alaska-Treadwell Mining Company.—The last monthly report shows a run of 540 stamps for 29¾ days, crushing 59,699 tons ore of a realizable value of $93,026 and 1,319 tons sulphurets of a value of $52,553, the gross value of the bullion product being $155,750 and the working expenses about $38,500.

Prince of Wales Island.

Pacific Coast Mining, Milling and Development Company.—This San Francisco Company has 5 claims at Copper Mountain Harbor, on which is reported to be a large vein of sulphide ore between limestone and granite walls that runs 7% copper at the surface. The deposit is stated to be within easy reach of deep water.

ARIZONA.

Coconino County.

(From Our Special Correspondent.)

Santa Fe & Grand Canon Railway.—It is stated that the road from Williams to the head of the Bright Angel Trail will be built. The Santa Fe is to furnish the rails and take bonds of the company in payment. The grading for 15 miles out of Williams is practically complete and the second section of 15 miles will be completed in about 2 weeks. The railway will reach the copper mines near the Canon. The contractors are Lombard, Good & Company of New York. R. R. Coleman has a sub-contract to lay the rails on the first 15 miles and T. H. Rich & Sons are to finish 45 miles of the road (which will be 65 miles long) by November 15th.

Gila County.

(From Our Special Correspondent.)

Eureka.—This group of copper claims, 7 miles northwest from Globe, is turning out well.

Graham County.

Spenazuma Mining Company.—A telegram from Deming to the Tucson "Citizen," under date of August 31st, states that B. Y. Keys, E. Pennington and W. C. Willis, of Deming, have

written Territorial Secretary Wallace that they are not directors and have no connection with this company, which recently filed an amendment to its incorporation papers at the Secretary's office increasing its capital to $10,000,000, and giving the names of these men as 3 of the directors.

Maricopa County.

(From Our Special Correspondent.)

Properties near Wickenberg have been examined by T. E. Farish and W. E. Defty on behalf of New York parties, who have taken options on several groups.

Pima County.

(From Our Special Correspondent.)

Tres Amigos.—This mine, Oro Blanco District, bought by Frank McMasters for $40,000, is making a good showing. The milling capacity is to be increased and a cyanide plant erected. Development work is said to prove a large body of ore that averages about $25 to the ton.

Pinal County.

(From Our Special Correspondent.)

Mammoth.—George P. Blair, superintendent, reports everything going well. The capacity of the mill will soon be increased by 20 stamps, electric power generated on the Arivaipa will be transmitted 15 miles to run the mill and hoist. The dam in the river is estimated to cost upwards of $100,000.

Santa Cruz County.

(From Our Special Correspondent.)

La Fortuna.—The main shaft is down 800 ft. and the ore, the superintendent says, is of the same quality as found in the upper workings. The average value of the ore is said to be $60 per ton, and some very rich ore has been found.

Yavapai County.

(From Our Special Correspondent.)

A claim in the Crown King District belonging to George Carter has been sold for $5,000.

Some of the ore from Colonel H. A. Owen's new mine in the Copper Basin District, 12 miles from Prescott, is said to assay $100 gold and 8 oz. silver to the ton, the ledge being 4 ft. wide.

Castle Creek District.—Dr. Ford is erecting machinery on his Copperopolis property. On the Jones Group, adjoining the Copperopolis, the shaft is down 250 ft. The vein was intersected at 165 ft., and traversed, in the shaft, 75 ft. The vein matter is leached ground containing bunches of high-grade copper ore.

Crown Point.—The recently erected 10-stamp mill is all ready to start when Col. Brodie and his associate, Mr. Van Buren of New York, arrive. There are 2 shafts about 300 ft. deep, exposing an average width of 5 ft. of ore. The average value is said to be $22 per ton. A strike of very rich ore was recently made in the bottom of one of the shafts.

Whipsaw.—The shaft is down 250 ft. at this Castle Creek property. One hundred acres of patented land, known as the Silver King Mine on Groom Creek, has been transferred to the purchasers, Peter and James Mackin, the consideration being $16,000.

Yuma County.

Harqua Hala.—A. G. Hubbard of Redlands, Cal., has bought back these gold mines, a controlling interest in which was bought by an English company some 7 years ago for a price reported to be $1,250,000. The mines have been idle some years as the English company did not succeed in making them pay.

CALIFORNIA.

Butte County.

(From Our Special Correspondent.)

Golden Trout.—Twenty-five men are employed on this property on the south fork of the Feather River, 4 miles from Lumpkin. A 10-stamp mill is being erected, also a saw mill, as the company will cut all its own timber for the mine, etc.

Calaveras County.

(From Our Special Correspondent.)

Bonanza.—At this mine, 2 miles south from Angels, a large body of rich ore has been encountered at a depth of 200 ft.

Lightner.—The mill at this mine near Angels has been increased to 40 stamps and a contract has been let to sink 200 ft. deeper; 20 concentrators are running, with ore enough in sight to keep the plant busy for a long time.

Sheepranch.—This mine at Sheepranch, 12 miles northeast from San Andreas, is being developed under V. S. Garbarini, superintendent. The new plant is working very smoothly, and the tunnel from the Pioche Mine has been extended and drifting from shaft to meet the tunnel has also been pushed. The shaft, which is 1,200 ft. deep, has been reopened and retimbered to a depth of 300 ft., and pumping will continue. From this old shaft drifts, crosscuts, stopes and upraises comprise the old workings. Some of the drifts are 1,400 ft. in length along the ore shoot. On the south there is another shaft about 700 ft. deep which will be drained by shaft No. 1.

El Dorado County.

(From Our Special Correspondent.)

Blue Gouge.—Surface improvements on this property, 9 miles from Pleasant Valley on Camp Creek, are being rapidly completed. They consist of an assay office, blacksmith shop, mill, etc. The underground work has developed good ore. William Bind is superintendent.

Gopher-Boulder.—This mine, ½ mile west from Kelsey, has been sold to an English syndicate for $100,000. This includes the 20-stamp mill and the water power. The property will be put in working shape at once and a large force of men employed under Superintendent D. H. Jackson.

Inyo County.

(From Our Special Correspondent.)

Ballarat District.—Considerable mining is being done, most of the properties being base ore propositions, the plants including cyanide works. The want of necessary capital is the main drawback in development.

Kern County.

(From Our Special Correspondent.)

Little Angel.—This property, 1 mile west from Havilah, an old gold producer, is equipped with a new plant consisting of a 10-stamp mill, cyanide works, steam hoists, pumps, etc. Fifty men are employed under R. C. Shaw, of the Ophir Mine, the same parties working both mines. The ledge is said to be 7 ft. wide, carrying $35 rock.

New World.—A large force of men have been put at work at this old mine, 1 mile west from Havilah. The vein is reported to be 20 ft. wide. A new plant is being put in position.

Ophir.—Twenty-five men are employed at this mine, 1 mile southwest from Havilah. The mill has been in operation for several months. The property, which produced largely about 30 years ago, is worked by Eastern parties. R. C. Shaw is superintendent.

Mariposa County.

(From Our Special Correspondent.)

Mariposa Mining and Commercial Company.—This company will begin active development of its mines in the famous Mariposa Grant at once. Representatives are already on the ground preparing to open the Princeton Mine, which will be the first one exploited. This mine yielded over $3,000,000 in early days. A contract to deliver a large amount of wood has been let.

Plumas County.

(From Our Special Correspondent.)

Elizabethtown Gravel Channel.—This property, ½ mile northeast from Quincy, adjoining rich ground worked out some years ago, is to be opened again, and a force of men put at work pumping out the double compartment shaft. San Jose parties control the mine.

Little Bear.—The tunnel run to crosscut the ledge is being pushed with 2 shifts. The ledge is believed to be 10 ft. wide, carrying $6 free milling gold ore. The mine is located about 4 miles from the Robinson Mine.

Robinson.—Twenty-five men are at work at this mine in Granite Basin, 8 miles northeast from Merrimac in Butte County. The mill has been remodeled and 10 stamps will be run. New hoisting works are being erected. The shaft is to be sunk 100 ft. deeper. M. S. Trowbridge is superintendent.

Riverside County.

(From Our Special Correspondent.)

O. K.—This group of mines in the Virginia Dale District has been opened by over 1,200 ft. of development work, which consists of one 250 ft. shaft with levels at the 50, 100, 150 and 200 ft., and one just started on the 250 ft., with winzes connecting all the levels. All the ore to run the mill has been taken from the dead work; this ore paying working expenses. Assays range from $7 to $86 per ton in gold; milling about $20 per ton.

Shasta County.

(From Our Special Correspondent.)

Afterthought.—This group of copper mines at Furnaceville, on North Cow Creek, has been sold by the Enright Brothers through J. Sallee to Eastern parties for the sum of $150,000, and a substantial payment has been paid down, a second payment to be made October 1st, and the balance in 6 months. This property, comprising 6 claims, is one of the oldest copper properties in the county. About 20 years ago a 30 ton smelter was erected to handle the ore. The ore body has been developed by tunnel and high grade matte was produced by the smelting operations. Assays of the matte produced some months ago were as follows: $16.54 gold, 85 oz. silver and 52.3% copper, and another $19.16 gold, 90 oz. silver and 60% copper. Very recent assays have not been reported. Mr. Sallee has been very successful in engineering the sale of copper properties in Shasta County.

Gold King.—This gold quartz property, on Muletown Mountain, which has been worked with profit for several years, has been sold to J. V. Cooke of Colusa, Cal. The developments consist of a shaft, tunnel and several cuts.

Tuolumne County.

(From Our Special Correspondent.)

Consolidated Eureka.—The Dead Horse Mine, part of this property located at Carters, will be forced to close down very soon owing to the scarcity of water to work the large plant. The incline shaft is one of the deepest in the State.

Genoa Mining Company.—This Italian Company has secured a 6 months' bond on the Brussie and Filipo Ranches, about 1 mile southwest from Sonora. Men are now sinking on the main ledge and will cut through to the foot wall. A 2 compartment shaft will probably be sunk.

COLORADO.

Boulder County.

Gold Extraction, Mining and Supply Company.—Mrs. Mary J. Williams of New York has brought suit against this company and against Charles W. Caryl, president of the company, claiming that she has been swindled out of over $130,000. The company's property is in Wall Street District, and according to statements made in court, have shipped but about $3,000 worth of ore.

Clear Creek County.

(From Our Special Correspondent.)

Black Lion Mining Company.—C. D. Gordon, manager and part owner of this property at Idaho Springs, says the sinking on the Black Lion from its 210 ft. shaft is to be resumed and continued to 800 ft. The east drifts have encountered pockets of high grade mineral and these will also be pushed ahead. In the lower level the top of several shoots have been cut.

Crockett Mining Company.—Manager B. J. Smith of this mine, owned in Chicago, reports 4 levels started from the shaft, and night and day shifts on. The shaft is down 800 ft. Ore bodies are on the north side, while the ground on the south is virgin. The ore from the long adit was high grade smelting and Mr. Smith completed the sinking of the shaft 800 ft. without starting a level. He will employ about 50 men in development.

Donaldson-Kohinoor.—Deeds are to pass on this property in case the company does not come forward and redeem it, the property having been sold for taxes and the time for issuance of tax deeds being at hand. The company is located in England, and has been advised. The various mines and mills are worth over $100,000, but have been idle for several years with the exception of small blocks of ground being worked by leasers. The mines are gold and silver.

Pennsylvania Tunnel.—Contracts have been let for several hundred ft. of drifting on veins cut by this bore which has Philadelphia capital.

Stevens Mining and Milling Company.—The owners of the Stevens, at Silver Plume, have incorporated with a capital stock of $100,000, to do considerable development. The mine was worked several years ago, and was a heavy producer of silver. The leasers who are now in the mine have found ore bodies and these will be developed by the company. J. H. Robeson and C. K. Wolfe of Georgetown are back of the new company.

Gilpin County.

(From Our Special Correspondent.)

August Ore Shipments.—The shipments of smelting ore and tailings for the month were 380 cars, or 7,030 tons, to Denver and Pueblo smelters, the largest in the history of the county, and in comparison with the shipments of the corresponding month in 1898, show an increase of 1,288 tons, or 20%. The shipments would have been heavier if sufficient cars could have been secured.

Mining Transfers and Deeds.—C. E. Blake to G. A. Seeley 1/5 interest in Two Strangers and Treasury Vault lodes. George Nicalai of Leadville to Thomas Channing, 1/3 interest in Whiury lode. A. Whitehead to B. F. George, annex lode for $342. J. Shinneman, an option to B. A. Pratt on Slide lode. W. Kelly and G. Kanarum have taken a 3 years' lease and bond on the Kentucky Belle claim. A. E. Dickson to E. L. Melvin ¼ interest Jennie D. lode.

Independent Mining District.—This section is showing renewed activity, a large number of miners are at work and the prospects are favorable for steady work all winter. The Perigo is operated by the Tonawanda Leasing and Mining Company, and employing about 50 men. About 100 tons of medium grade ore is taken out daily. E. M. Messiter of Perigo, Colo., is manager. The Gold Dirt is worked by a local pool, with T. Schlessinger of Gilpin as superintendent. The daily shipments average 25 tons. The Lindemann Tunnel Mining and Milling Company has started a tunnel from Stewart Gulch, which will open up a large territory. Prof. E. C. Lindemann is manager. The Douglass slow-drop 20-stamp mill has been leased by Prof. Lindemann, who is now running through some top quartz. The Travis Gulch Mining and Milling Company has filed articles of incorporation with its principal office at Rollinsville, Colo. The capital stock is $500,000 in shares of $100 each and the directors are: Chas. G. Richardson, C. O. Johnson, B. F.

Hersh, H. De Forest Baldwin and J. M. Sanderson.

Avon Mill.—This mill has started up on North Clear Creek and is now running 10 stamps on Fourth of July ore.

Cook.—Sinking has started with 3 shifts at 800 ft. and will continue until 1,000 ft. is reached. The shipments for August were the heaviest in the history of this property.

Kokomo.—Arrangements are under way for starting up this property, which has been idle for a number of years. Dr. Henry Paul of Central City is owner and manager.

Maggie.—A good strike has been made in this claim by Denver lessees, ore has been taken out running 74% lead and 84 oz. silver per ton, second class ore running $39 per ton. Henry Collins of Black Hawk, Colo., is manager.

Topeka.—A new plant, consisting of a 120-H.P. hoist, two 80-H.P. boilers and a Norwald 6-drill air drill, will be installed at an early date. Henry P. Lowe of Central City is manager.

Gunnison County.

Carbonate King.—This claim, near Ohio City, is being developed by a small force. The shaft is down 130 ft.

Lucky Strike.—This property, at Chance, has been equipped with a hoist, and the 106 ft. shaft is to be pumped out and sunk 200 ft. deeper. Thomas McEwan of Jersey City, N. J., is president of the company.

Lake County—Leadville.

(From Our Special Correspondent.)

Mining Conditions.—The fact that the railroads had 800 cars of ore tied up at the smelter yards has held down shipments somewhat, but September will see the greatest tonnage in the history of the camp. It is announced that the Colorado & Southern Railway will build to the Breece Hill section in competition with the Rio Grande and that the Midland people also anticipate tapping the mineral sections.

Bix Six Mining Company.—September will see much development work on this ground, leased by the Englebach Brothers, who have just taken up the 156,000 shares of stock held in escrow, paying, it is said, 17½c. per share as per contract. Despite denials by the lessees, it is believed that they have a wonderful ore body opened.

Coronado Mining Company.—Development is at the 550-ft. level. Shipments of 25 tons per day of iron ore are made.

Fortune Mining Company.—The big lead ore body is showing up better still, and enables the company to ship 40 to 50 tons per day, running fairly well in gold, silver, lead and copper.

Golden Lamp Mining Company.—The company has 150 acres of well located territory on Breece Hill, southwest of the Ibex. A large tunnel is being run with levels at various points along it, lateral drifts east and west. In one of these a drift about 3,200 ft. from the mouth of the tunnel a seam of sulphide is being followed that is 4 to 14 in. wide.

Mab Mining Company.—Shipments for September are to be increased to 150 tons of fair grade ore per day. The Mab will in the future ship by rail.

Maid & Henriett.—Twenty sets of lessees are working on this ground, and all are shipping ore, the tonnage for last month being over 3,000 tons, including oxidized iron, lead carbonate, iron and copper sulphides and a small amount of zinc.

Manganese Shipments.—Col. Geo. W. Cook has just returned from Chicago, where he arranged for an increased tonnage, and shipments are to be run up to 300 tons per day.

Nisi Prius Leasing Company.—This combination, working and sub-leasing the Hall, Weir, Crown Point and Pinnacle shafts of the Nisi Prius Mining Company, has greatly increased its production and will show shipments of over 2,500 tons of fair grade ore for the month. In addition considerable new work is being prosecuted by the leasing company and the sub-lessees.

Resurrection Gold Mining Company.—The company has started its new 3-compartment shaft above the Dolly B. A fine plant is to be ordered for the new workings.

Mineral County.

The situation at Creede has greatly improved since the resumption of the smelters. Ore is being shipped at the rate of 15 to 20 cars a day, though many of the larger producers are mining with reduced forces.

Amethyst.—A new boiler, hoisting plant, etc., has arrived for this mine, and the principal work now is preparing for development on a larger scale than ever.

Commodore.—The working force has been increased and about 150 tons are daily shipped.

Teller County—Cripple Creek.

Old Colony Company.—A Colorado Springs despatch states that articles of incorporation have been filed for this Company, with George D. James, Dean K. Emerson, George H. Proctor, Walston R. Brown, Henry W. Tamonbly, Thomas F. Brett and Edward F. Steifel, corporators; the Finance Company, with George H. Proctor, Milton J. Stair and Merrick A. Rogers, corporators, and the Cripple Creek Railway Company, with George H. Proctor, James D. Benedict, Alfred C. Phelps, Walter E. White and Joseph D. Stevens, corporators. The capitalization is $1,000,000. The 3 companies are to construct a railroad tunnel, to end 4,000 ft. below the town of Victor, with branches encircling the Cripple Creek District, the total length being 50 miles. The tunnel will enter the mountains at Colorado City and emerge at Marigold. On the way a road will be built to Canyon City from Cripple Creek, and a cyanide mill of 500 tons daily capacity and a large hotel will be built 4 miles from Canyon City.

(From Our Special Correspondent.)

The general outlook in the District is good. The old producers with few exceptions are keeping up their old records or making new ones. A large amount of leasing and prospecting is being done. A very large amount of stock is changing hands. One difference between the present and the boom of '96 is that much less attention is paid to outside property now than then.

Doctor.—From all accounts this old Raven Hill producer will again come to the front. The mine is under lease to Josiah Winchester and others who have sublet a good portion of it. Work is progressing well on these leases, and some ore has been shipped already.

Gold Coin.—Work is being rushed on retimbering that part of the main shaft that was burned during the recent fire in Victor. It is understood on good authority that the mine is looking better than ever.

Independence Townsite and Mining Company.—Preparations are being made to build the new steel ore house. The steel gallows frame and shaft house is the only one at present in the district. As the shaft is in the town of Independence, a small town and liable to be burned down at any time, steel buildings show farsighted policy.

Midget.—The shaft house was this week completely destroyed by fire. Nobody was injured. It is not known at present what will be done toward rebuilding the plant. The mine has connection with the Gold Hill tunnel. The property belongs to a company of which Burns and Peck of the Portland are heavy stockholders. The mine has never been considered a heavy shipper. It is on Gold Hill near the Moon Anchor.

New Mining Companies.—New mining companies are still being formed. The Kitty Gold Mining is one of the latest and owns ground on Bull and Ironclad Hills. The Jerry Johnson, Little Pedro and other ground has also been formed into a company. This property lies close to the ground of the Damon Company. Another company is the M. J. T., which owns ground near the National Tunnel and Mining Company's property.

Stratton's Independence, Limited.—New ore houses are being put up. The mine has undoubtedly kept up the splendid record of Battle Mountain.

GEORGIA.

(From Our Special Correspondent.)

Southern Smelting Company.—This company, with offices at Atlanta, Ga., is erecting a smelter and sampling works at Oakdale, 9 miles west of that city. It has obtained reasonable rates from the Southern Railroad Company, and is purchasing ores in its vicinity and in adjoining States.

IDAHO.

Blaine County.

Camas No. 1.—The old hoisting works at the shaft at Hailey have been renovated and almost reconstructed, all the machinery put in good working order, and the new pumps started.

Idaho County.

Central Idaho Gold Dredging Company.—This company has a dredge boat at Elk City, on Red River, that has a working capacity of 1,500 cu. yds. per day. It is of the Bucyrus type, but has a system of adjustable tables, capable of being adjusted to the quantity and character of the material handled, designed by Howe & Juessen of Spokane, Wash., to save the gold values. There are 1,280 acres of ground in the tract, the average depth of the material being 8 ft.

Shoshone County.

Mining Conditions.—As a result of the influx of new men, all the Canyon Creek mines except the Tiger-Poorman are now reported to be running full-handed. At Mullan, the Morning Mine is working over 100 men, its full force being about 350. With additions to these 2 mines there will be as many men working in the Coeur d'Alenes as at the time of the riot last April. As a rule the new men are giving satisfaction, although many have been hired who were discharged almost immediately, proving to have no knowledge of mining. At first the men were all brought in by men sent out after them, but now many are coming in response to letters which friends have written, after seeing conditions at the mines. The permit system is bitterly attacked by labor agitators, but the union miners are reported to be taking a different view of it, many applying for permits recently. The state authorities as well as the mine owners are rather indifferent in regard to applications from union men.

MICHIGAN.

Copper.

Atlantic.—The August product is said to have been 27,944 tons. In one day recently the mill treated 1,400 tons of rock, which yielded 14 tons of mineral. "A" shaft will soon be working a double skiproad to the 5th level. At "B" the foundation walls of the new engine house are completed. The new hoist furnished by Fraser & Chalmers will be in operation by October 1st. It will have a pair of 24 by 60 Corliss engines driving a double-cone drum 12 ft. in diameter at the ends and 25 2-5 ft. at the center. The design is almost identical with that of the hoist at "A" shaft. It is expected that this hoist will lift with ease a total of 11 tons from a depth of 4,000 ft.

Baltic.—The stamp at the Atlantic Mill is said to be handling about 245 tons of Baltic ore daily.

Calumet & Hecla.—The great coal handling plant erected by the C. W. Hunt Company of New York at this company's docks is now in operation. It consists of 12 steam shovel towers each 90 ft. high. The shovels have a capacity of 3 tons each. The total capacity is 24,000 tons per day.

Tecumseh.—The shaft on the Osceola lode has been sunk 47 ft. below the seventh level. Sinking will be continued to the 10th level. In this work 8 drills will be employed, while sinking below the 10th level will be continued with 2 drills.

Iron—Marquette Range.

Lake Superior.—The big Gates crusher, at the Hard Ore Shaft of this Ishpeming concern, is now in operation.

Iron—Menominee Range.

D. H. Bacon, president of the Minnesota Iron Company, has secured from Zebina McColman, representing Chas. Hebard & Son, the Pequaming lumbermen, the surface and mineral rights to the Hebard lands in Iron County. The exact purchase price is not known, but it is stated that last winter the lands were offered at 30c. per acre, the purchaser to pay the back taxes, which amount to about $10,000.

T. McCusker is reported to have found good non-Bessemer ore on the n. ½ of the n. w. ¼ of section 24, T. 43, R. 33, on property owned by J. M. Longyear of Marquette.

Comet.—This mine, near Wakefield, Mich., is being opened by Corrigan, McKinney & Company of Cleveland. The lease of the property was surrendered in 1894 by the Penokee & Gogebic Development Company, and all the machinery removed. Since then most of the buildings have been destroyed and new buildings and equipment will be needed.

Gibson.—This find, near Amasa, has been sold to the Oliver Mining Company and that concern will try to get the property into the shipping list next year. The deal was closed at Iron River by Thoburn Gibson, holder of the option, John Corry, representing the fee owners, and Superintendent T. F. Cole of the Carnegie interests. It is rumored that Mr. Gibson got $30,000 for the option. He will act as superintendent at the location.

Riverton.—At this mine near the Iron River, a triple expansion Prescott pump has been put in, which will handle easily all the water made in shafts 3 and 5.

MINNESOTA.

(From Our Special Correspondent.)

The new steel steamer of the Bessemer fleet, "Douglas Houghton," has just made a record by carrying 6,300 gross tons of ore and pulling the schooner "John Fritz," of the same fleet, carrying 7,200 tons more, in all 15,120 net tons pulled by one engine, and the loads will make the trip from Duluth to Conneaut at about 11 miles per hour. The Bessemer Company intends to put behind the "Houghton" and other larger and stronger ships of its fleet 2 of the largest schooners, so that the combined load will shortly be increased to 23,000 or 24,000 net tons. At today's going rate for cargoes the gross returns for this cargo of the "Houghton" and "Fritz" would be $28,123. The cost of running the two for the 10 days occupied in making the round trip is not far from $2,500, roughly speaking.

Iron ore shipments from the head of Lake Superior, all from Minnesota mines, for August were 1,456,500 gross tons, and for the year they have been 4,900,000 tons, an increase of about 750,000 tons over the record of last year. There remain about 250,000 tons of last winter's stocked ore to be shipped. Last month the Duluth, Missabe & Northern shipped from its docks in Duluth the enormous amount of 648,000 tons, an increase over the same month last year of 112,000.

Articles of incorporation for the Virginia & Ely Railroad have been filed. The road will be the Oliver Company's own ore hauling line, and will carry all the ore of that company from points it may reach, except what is tied up by traffic contracts with other lines, this latter including the ore from both Mountain Lion and

Oliver-Lone Jack. The company, it is stated, expects to erect an ore shipping port at some point on Lake Superior east from Duluth, where the haul from Ely will not be more than 50 miles, but its chief work for the immediate future will be hauling ore from the mines at Ely—Pioneer, Zenith, Sibley, Savoy, and Section 30, besides what may be found on explorations now under way. The company has a capital stock of $1,000,000 and a bond limit of $5,000,000. Its officers are H. W. Oliver, president; Jas. Gayley, vice-president; C. D. Frazer, secretary; H. M. Curry, treasurer.

John Weske, a resident of Moose Lake, 50 miles south of Duluth, states that he has made a discovery of iron ore close to the village. Another find of mineral is reported from Cloquet, on the St. Louis River, where a gold bearing vein is said to have been discovered.

Iron—Mesabi Range.

(From Our Special Correspondent.)

There are now no stockpiles on this range, except those of the Rockefeller Company at its Hibbing group, and these are being shipped steadily. There are no stockpiles in Minnesota except these and one at Chandler, Vermilion Range.

Adams.—Next week will see all stockpiles at this mine near Eveleth shipped away, and hereafter all work will have to be from the shafts and pit direct.

Jones Explorations.—At these explorations, in the s. w. ¼ of section 4, T. 58, R. 17, operated by John J. Jones of Iron Mountain, Mich., test-pitting has ceased and drill work will be carried on to test the ore located by the pits.

Williams.—The 80 acres comprising this tract at Biwabik, once a part of the Cincinnati, has been leased to J. M. Thomas for a partial supply of ore for the Duluth furnace, soon to go into blast. John T. Jones will have charge.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

Continental Zinc and Lead Mining and Smelting Company.—Messrs. Ladenburg, Thalmann & Company of New York City, and Messrs. Hayden, Stone & Company of Boston have jointly bought the Kohinoor zinc ore tract at Joplin, and also the Fourteen Mining Company's lease and mill, and have organized the above company to acquire this property. The capital is $150,000, in $10 shares, 50,000 shares of which are reserved in the treasury. The 100,000 issued shares have been privately placed at $5 per share. The directors include: Ernest Thalmann of New York, president; Alvin W. Ketch and W. A. Underwood of New York; A. D. McClellan, W. E. Barrett and Charles Hayden of Boston and Capt. S. P. Snider of Minneapolis.

Joplin Ore Market.—There was little change in market conditions during the week and the price for top grade zinc ore was unchanged, an unusually large quantity selling at $45 per ton, or $2 per ton above the Association scale for ore carrying 60% metallic zinc. Lead sold all the week at $27 per 1,000, as last week. The smelting men claim that the scale price of the Producers' Association is too high, but are paying above it. During the corresponding week last year top grade zinc ore sold for $34 per ton and lead brought $23.50 per 1,000. The output was less by 432,720 lbs. of zinc and 352,770 lbs. of lead, and the value was less by $47,062. For the first 35 weeks last year the lead sales were greater than this year by 5,954,220 lbs., but the zinc sales were less by 64,430,640 lbs. and the value was less by $3,563,700. As compared with the preceding week the lead sales show an increase of 345,110 lbs., but the zinc sales were less by 1,578,540 lbs. and the value was less by $41,379. Following is the turn-in by camps:

	Zinc, lbs.	Lead, lbs.	Value.
Joplin	1,291,000	270,830	$35,071
Carterville	1,286,420	238,820	30,176
Oronogo	692,130	2,140	13,730
Webb City	390,050	66,960	8,609
Duenweg	481,830	5,920	8,833
Central City	188,640	3,650	3,495
Belleville	72,650	5,840	1,656
South Jackson	119,650	.....	2,154
Stotts City	119,310	.....	2,386
Cave Springs	145,700	8,150	2,854
Alba	83,490	.....	1,837
Hells Neck	183,340	14,210	4,417
Wentworth	43,960	.....	879
Granby-Newton	210,000	18,540	4,180
Aurora	1,170,000	20,350	19,546
Morgan County	37,540	408,260	8,991
Barry County	104,370	41,280	2,430
Dade County	167,680	34,680	2,434
Galena-Empire	2,120,470	159,740	41,481
District total	8,908,330	1,299,410	$195,159
Total 35 weeks	358,554,870	31,738,010	$7,868,099

The relations between the smelting interests and the producers, while apparently amicable, are not at all satisfactory to the metal manufacturers who have been experimenting with Colorado ores, but as far as can be learned the experiments have been unsatisfactory at the Iola smelters. It is claimed that the Colorado ore carries so large a percentage of iron with antimony and silver that it cannot be reduced at as good a profit as the higher priced Missouri ore. The sentiment in favor of smelting the ores of the district at home is rapidly growing. It is the expressed intention of some of the companies that have come in here during the last year or two to smelt the ore from their own mines.

Mining Land Sales.—The Blossom Mine on the Lead Hill lease of the Collins land at Belleville was sold August 31st to a company of Eastern capitalists for $25,000. The mine adjoins the famous Eagle, and was the property of W. C. Freeman of Providence, R. I., and Ed. Mallette of Belleville. The Rabbit's Foot lease of 40 acres of the Joiner land north of Central City has been sold by W. G. Myers to Eastern parties for $25,000. The American Zinc, Lead and Smelting Company, through its resident general manager, Gov. W. C. Renfrow, has completed the purchase of the entire holdings of the Centre Valley Mining Company, paying $191,000 for the leasehold of over 200 acres and the fee of 73 acres of the Hockaday Land which was under lease to the Centre Valley Company. The total cost to them was $281,000 for the entire property, a portion of which they purchased some weeks ago, and they now have invested in mines and mineral lands in this district $1,200,000. The company will build a large dyke around the entire property to prevent the ground from being flooded by Centre Creek during high water, and will also make other improvements. A ⅛ interest in the Opal Mine on the Beckwith-Hall lease at Carterville has been sold to Henri Anderson of Philadelphia for $2,500. The Prince mill, mine and 7 lots on the Yale & O'Brien lease in Chitwood Hollow at Joplin has been sold to the Consolidated Lead and Zinc Company. The Gray Eagle lease of 7 lots of the Perry ground at Carterville was sold this week to Eastern parties, but the price was not made public. Walker & M'Ilvane of Butler, Pa., have sold the Kathleen Mine, mill and lease of 20 acres of the Bruce land at Belleville to Col. J. E. House of Omaha, Neb.

MONTANA.

Flathead County.

American Kootenai Mining and Milling Company.—This company, with $2,000,000 capital, organized under the laws of Virginia, is developing the Gold King group of 9 claims on West Fisher Creek, some miles from Libby. A 10-stamp mill is about to be installed and 3½ miles of wagon road have been built to connect the mill with the county road.

South Bend & Montana Mining Company.—This company has placer ground on Libby Creek, 14 miles from Libby, and several claims in the Rainy Creek District on which it has been doing development work this year. On their placer property a ditch is being dug to drain the ground.

Granite County.

Granite-Bimetallic.—In the Granite Mill, at Phillipsburg a system of air pipes is being put in to lessen the dust. A pipe from every mortar in the battery is connected with a larger pipe, into which the dust is sucked by means of a blower. Every 12 hours or so the dust is removed by a scraper, provided for that purpose. The system, it is claimed, will carry every bit of dust from the battery.

Jefferson County.

Basin Gold & Copper Company.—This company is being largely advertised in the New York daily papers, and the stock is being sold, we understand, at $1.50 a share, which would be at the rate of $750,000 for the property.

The Hope, one of the mines belonging to this company, was at one time very profitable, having worked an extremely rich but narrow vein a few inches in thickness. The information we have received from experts familiar with these properties is that this rich vein did not extend below the 300-ft. level, and that only very low grade ores have been found below that. The vein opened is a very large one, but the ore so low grade that after concentrating 7 or 8 tons into 1 the concentrates run only $9 or $10, which would certainly not pay to work.

We also hear on what we believe to be very reliable authority that the statements made in the advertisements of this company, that there are reserves of ore in sight, worth $3,000,000, are not warranted. Moreover, the advertised statement that this property is on the same ridge as the Anaconda, the Boston & Montana and the Parrot mines "is simply preposterous." In short, while there is always a possibility of further development work opening up a paying body of ore, this cannot now be said to be demonstrated. The statements published in the advertisements and circulars need a good deal of toning down to bring them within reasonable distance of the facts.

Ravalli County.

Curlew.—Twenty men at this mine, at Victor, are sinking a double compartment shaft several hundred feet east of No. 2 shaft. This mine was a dividend-payer in the latter '80s, and was recently sold at receiver's sale to A. M. Holter of Helena, one of the former owners.

Silver Bow County.

Montana Ore Purchasing Company.—At the smelter, according to a Butte dispatch, many improvements are under way. The building will be lengthened 100 ft., making it 400 ft. in all. Two new converter stands are in and 2 more are on the way. There are 36 circular roasting furnaces in the calcining department and 40 more are being put in. An electric tramway will be put in to carry the concentrates to the smelter. The concentrator treats 700 tons per day, and ships every day 90,000 lbs. of pig copper to the New York refinery, and much of the product is sold abroad. The sixth reverberatory furnace has started and the fifth is nearly completed and will be one of the largest in camp, 40 ft. in length.

(From Our Special Correspondent.)

Boston & Montana.—At the West Colusa a small engine has been put in at the 200 ft. level to hoist waste to the stopes for filling. The West Colusa at present is hoisting more ore and employing more miners than ever before in its history.

East Butte.—Sinking is in progress at this mine in the Columbia Garden District, about 4 miles east of Butte proper. The showing so far is unprecedented in that district, and with further development the mine is expected to become a good producer of copper. This property is partly owned by the Thompson Investment Company of Butte and New York.

Original.—The new vertical shaft to supplant the old incline at this mine, property of W. A. Clark, was completed a few days ago. Great skill was displayed by the mining engineer in charge, as the shaft was raised from the 1,000 ft. level to connect with the portion sunk 150 ft. from surface. When the proper connections were made it was found the part sunk and the raise were not out of place the fractional part of an inch. This record is unprecedented in Montana, and is the first shaft raised with permanent timbering while raising was being done. The old incline shaft will now be used for ventilation and pumping. A new skip will be put in the new shaft in a few weeks.

Parrot.—At this Butte mine, now the property of Amalgamated Copper Company, an excavation is being made for extra ore bins, the management intending to equip the shaft with huge skips. The Parrot shaft is down 1,100 ft., but an additional 100 ft. will be immediately sunk. This mine has been closed to make necessary shaft repairs. It has started work again, employing something like 95 men on a shift. About 350 tons of ore is being raised every 24 hours, a portion going to the Colorado smelter, the remainder to Anaconda.

NEW MEXICO.

Coal and Coke Production.—J. W. Fleming, United States coal mine inspector, has filed his annual report covering the fiscal year 1899. The number of mines in operation is 25, or 5 more than were operated during the previous year; new mines opened, 4; not in operation, 9. The production for the fiscal year was as follows: Bernalillo County, 434,569 tons; Colfax County, 313,647 tons; Santa Fe County, 247,139 tons; Rio Arriba County, 39,000 tons; Socorro County, 2,400 tons; Lincoln County, 1,469 tons; San Juan County, 810 tons, making a total production of 1,049,034 tons, an increase in the total production over the previous year of 190,451 tons. There is also an increase in the total estimated value over the previous fiscal year of $191,908. The total number of employees is 1,880. There was produced in the territory by the Colorado Fuel and Iron Company from the Starkville Mine, Las Animas County, Colo., 29,586 tons of coke, and from the Blossburg Mine at Gardiner, N. M., 7,154 tons of coal was made into coke.

The inspector calls attention to the fact that there are no territorial laws governing the coal mine industry, and that the federal law should be amended by Congress, especially as to mines generating fire damp. The coal trade in the territory for the fiscal year has been brisk and the coal companies have been unable to fill more than 2/3 of the orders received, principally on account of the scarcity of miners.

Socorro Grant.—The United States Court of private land claims, sitting at Santa Fe, has rejected the Socorro grant of 900,000 acres in Socorro County. The court found the documents in the case to be forgeries and announced that it could not confirm the grant, either in law or in fact. Under existing laws the people located upon the territory affected by the decision who have possessory rights can make their titles good by filing claims for small holdings. The rest of the tract will be open to settlement under the United States laws.

Grant County.

Hanover.—This property near Silver City is running steadily. A 2 compartment shaft is to be started.

Modoc.—This group near Silver City, owned by A. W. Tennant, is shipping 20 tons of $15 ore daily.

Santa Fe County.

Crown Point.—It is stated that H. B. Cartwright of Santa Fe has sold his option on this group of mines at Bland for $50,000 to ex-Senator Warner Miller and Wm. E. Speer of New York. The sale was made through A. W. Tennant. Mr.

Cartwright has received the first payment of $10,000. The owners of the Crown Point group are Benjamin Johnson, J. D. May, B. F. Bruce and H. Lockhart. The Crown Point group consists of the Crown Point, Giant and Bull of the Woods.

NORTH CAROLINA.

Allegheny County.

(From Our Special Correspondent.)

Peach Bottom.—These copper mines, long known as a good prospect, are now being opened up by New Jersey capitalists who are finding some rich ore.

Ashe County.

(From Our Special Correspondent.)

Copper Knob.—This old mine is about to resume, it is reported. This mine, when opened, produced ore that ran 20% in copper with ½ oz. of gold and several of silver to the ton. Good results are expected, now that the price of copper will justify the working.

Cabarrus County.

(From Our Special Correspondent.)

MacMacken.—This mine's main shaft is down over 200 ft. on a fine body of auriferous iron pyrites. The company is also working several other shafts, one of which is on a copper vein. Several thousand tons of low grade ore are on the dump, and a reduction works will be erected. The mine is owned and operated by the Whitney Reduction Company. Col. E. B. C. Hambley is general manager. Geo. Whitney of Pittsburg, Pa., is president.

Reed.—A 10-stamp mill is in operation here on a 20 ft. belt of ore that runs but 60c. per ton.

Guilford County.

(From Our Special Correspondent.)

Three of the well known copper-gold mines in this county are about to resume work, owing to the demand for copper.

Rowan County.

(From Our Special Correspondent.)

Sol Morgan has opened a deposit of copper ore on his land near Salisbury and is mining and shipping several carloads to reduction works in the north.

Dutch Creek.—These gold mines some 10 miles southeast of Salisbury are being reopened by their owner, J. J. Newman of Salisbury, N. C.

Union.—This copper mine is the scene of the greatest activity ever witnessed in a mining camp in this State. Nearly 1,000 men are busy and 14 boilers and engines are at work. A 2 mile track is building into the mine. A 100-ton concentrating plant is going up. Several adjoining mines, including the old Gold Hill mine, have been purchased. The output at present is 150 tons of ore per day, out of which 3 or 4 carloads per week of selected ore is shipped to New York. The remainder is stored on dump pending the erection of the concentrator. The ore carries copper, gold and silver. Several parties of New York and Boston capitalists have visited the mine the past week.

Stanly County.

(From Our Special Correspondent.)

Parker.—These gold mines have removed their large Worthington pump from the Yadkin River to New London. The pump has a capacity of 2,000,000 gals. per day and may be used for town water-works.

Thompson.—This gold mine has been obliged to suspend operations at its 10-stamp mill, owing to lack of water.

OREGON.

Baker County.

Bonanza.—This mine was sold by Geiser Brothers to a Philadelphia syndicate. The mine is developed by 10,000 ft. of workings, with one tunnel 2,000 ft. long on the vein and another of 2,000 ft. which crosscuts the veins. A third tunnel is 1,500 ft. long. A shaft is sinking from a point on the main tunnel 1,100 ft. from the entrance. These workings disclose 3 or 4 parallel veins, the first being 3 to 4 ft. wide, the second 10 to 50 ft. and the third about 15 ft. in width. The vein wall is slate. The ores are free milling with iron pyrite and streaks of tellurium. Last year, it is stated, 8,000 tons of ore were milled, the result being an average of $14.54 per ton. The mill is being enlarged to 40 stamps and a 10-drill air compressor has been installed.

Columbia.—This mine at Bourne, under the management of Frank S. Baillie, is putting in a new hoist, two 100 H.P. boilers and a 6 drill compressor. The hoist will be capable of working to 1,000 ft. depth. A shaft is being sunk to 500 ft. below the main tunnel. The 10-stamp mill saves 40% of the values on the plates, and about 50 tons of concentrates are shipped per month. A new and larger mill is contemplated.

PENNSYLVANIA.

Anthracite Coal.

Stevens.—At this colliery in West Pittston, where the employees, mostly Slavs and Poles, have been on strike some 4 weeks, a riot on September 2d resulted in the death of one man and the serious injury of several others.

Bituminous Coal.

About 4,000 acres of coal land along the line of the Chartiers Valley branch of the Panhandle Railway, between Canonsburg and Hill's Station, in Pennsylvania, which was recently opened at an average price of $40 per acre, has been sold to E. T. Hitchman, manager of the Canonsburg Coal Company, who is said to represent the new combination, the Pittsburg Coal Company. The transfer will be made September 1st.

Slate.

(From Our Special Correspondent.)

August Productions.—Quarry productions of roofing slate in August ran large. Some are here given: Bangor Valley, 1,664 squares; Bowers & Mutton, 1,255 squares; Wm. Harding & Company, Albion, 1,130 squares.

Quarry Deals.—The region is in a hubbub over the quarry deals in progress. Someone is planning a big coup, before the trade and the public finds it out. Your correspondent has good authority for the following statements: President W. J. Turner, of the Lehigh & New England Railroad, is the prime mover. Control of the American-Bangor has been secured. The Bangor-Southern lease was bought this week in New York and an option is held on the Old Delabole Quarry. Officials interested will not give out any information at all.

Bangor Star Slate Company.—Under this name a new company has been chartered, capitalized at $2,000, with these officers: President, G. W. Mackey; secretary, H. A. Mackey; treasurer, George Stoddard; superintendent, David Stoddard, all of Bangor. This company bought the Bangor-Superior quarry property at sheriff's sale for $200, subject to a mortgage of $19,000. The mill is being worked steadily and additional beds are being uncovered.

Crown Slate Company.—This Pen Argyl quarry is producing 1,000 squares of roofing slate monthly. The mill is turning out 13,000 ft. of blackboards and 25 carloads of general mill stock.

Fidelity Quarry.—Three ropes are working steadily and the quarry output has averaged one-third larger than last year, being 1,400 to 1,500 squares per month.

Imperial Quarry.—A company official states that operations will begin October 1st. At a recent meeting the capital stock was increased from $20,000 to $50,000. The mill is to be enlarged to double capacity, or about 30,000 ft. per month.

Klondike Quarry.—A tract is being cleared of top by Henry Parsons, lessee. The quarry lies next to the Grand Central.

National Quarry.—Slate making was renewed this week, a large slide having been removed.

New York Quarries.—An extension of workings is being made by the removal of 7,000 yds. of top dirt.

Star Slate Company.—The lease of this East Bangor quarry was sold September 1st to Oliver Labar for a syndicate, of which William J. Turner, president of the Lehigh & New England Railroad, is one. This is one of several big deals in slate properties about which there is much mystery thrown. The partnership of Cotton Amy, Richard Payne, C. S. Ford, John Ditchett, Jr., and John Langmead has been dissolved. The Star Slate Company, Incorporated, with a New Jersey charter, is the announced successor. The half interest held between Payne, Ditchett and Langmead was bought for $14,000. The lease has 6 years to run. Common rumor has it that the deal is one of a series planned by the Lehigh & New England Railroad to secure tonnage.

United States Quarry.—The company proposes expending $10,000, clearing out accumulated rubbish and removing top.

West Albion Quarry—The lessees have stopped manufacturing, present beds being worked to the depth limit. Operations are now confined to moving top, uncovering new beds. This quarry is directly on the Albion vein and makes 900 squares a month when in full operation.

Winsborough Quarry.—Charles Blake & Company, a Pen Argyl firm, have leased the abandoned W. W. Winsborough working, and are preparing to reopen it.

SOUTH DAKOTA.

Custer County.

(From Our Special Correspondent.)

Clover Leaf Mining Company.—This Deadwood and Chicago company has bonded the May mine, 8 miles west of Custer, where the rich strike was made last summer by the Carr Brothers. It is not known what the present bond amounts to. The Clover Leaf Company was organized to work the old Uncle Sam Mine, on Elk Creek, in Pennington County. Nick Treweek, for 17 years foreman of the Homestake Mine, is to take charge. A force has been set to work and extensive development work will be done.

Duchess.—A test run has been made on ore from this mine operated by J. F. Sidey. The shaft will be sunk deeper.

Mica Belle.—Work is soon to start on a 100-ft. shaft on the Mica Belle No. 1 and 2, owned by Chas. Harback, of Custer. Capital is being furnished by the Chicago Mica Mining and Milling Company, recently organized.

Lawrence County.

(From Our Special Correspondent.)

American Mining Company.—The diamond drill in the old Dacy shaft, in Ragged Top District, has penetrated 12 ft. of quartzite at 1,000 ft. from surface.

Big Four.—J. O. Dalby, of Hamburg, Ia., is working this mine in Deadwood Gulch, 1 mile west of Central City.

Esmerelda.—This mine, at the mouth of Blacktail, has been leased to James Terry and James Nelson, who have been taking out ore for some time. The mill has started. It is a free milling cement proposition. The mine and mill are owned by E. Faust, of Lead, and W. L. Faust of Central City.

Commonwealth.—C. E. Zipp and associates, of Deadwood, have leased to A. Arnold, this mine, in Two Bit District.

Garden City.—W. L. Faust and Joe Kellar have leased the cyanide plant in Garden City District, and are running out about 6,000 tons of tailings left from the chlorination works.

Golden Gate Mining Company.—This company has pumped out the old workings of this mine on the divide between Blacktail Gulch and Polo Creek, and preparations are being made to ship ore to the Kansas City Smelter. The company has bonded the property with the expectation of adding it to its other claims, which join on the west.

Golden Reward Company.—The company will rebuild the chlorination works destroyed by fire last week. Harris Franklin of Deadwood, vice-president of the company, has announced that the new works will have a capacity much larger than the old, and that the cyanide process will be added to the plant. The company valued the old works at about $150,000, and carried about $75,000 insurance. The new plant will be on the old site and will be fireproof. There will be some delay in rebuilding, as iron and steel works are behind in their orders. The company has let out a few miners in Bald Mountain District, but intends to keep a full force at work as far as possible opening up new properties. The fourth stack has blown in at the company's smelter, which will take about half of the ore that was being treated in the chlorination works.

Homestake Mining Company.—This company has been at work for some time on the flat formations of the Whale and Big Missouri mines in North Lead District.

Iron Hill Mining Company.—The company is opening up this old mine in Carbonate Camp. A drift will be run east from the 160 ft. level to catch a porphyry dyke about 60 ft. distant.

I. X. L.—A rich strike of free gold has been made on this claim in North Lead District, owned by Otto P. Grantz. About 1,000 lbs. of ore have been sacked and it is stated that the values run over $1,000 per ton gold. The property joins the Homestake on the north.

Pennington County.

(From Our Special Correspondent.)

Gilt Edge.—The stockholders met at Rapid City, elected new directors and officers and reorganized the company. The directors are: John L. Lewis and F. C. Lewis, of West Superior, Wis.; William D. Lowry of Minneapolis; John R. Wilson of Deadwood, and M. H. Day and son, M. L. Day, of Rapid City. The officers are: President, John L. Lewis; vice-president, William D. Lowry; secretary and treasurer, F. C. Davis; general manager, M. H. Day. It was decided to start up the mine in Strawberry Gulch, in Lawrence County, and the chlorination works in Rapid City, as soon as possible. A cyanide plant is to be added to the chlorination works. During the shut-down considerable development work has been going on.

Golden Slipper.—Sinking 4 miles east of Hill City has been resumed. The shaft is down about 275 ft. Some $20 ore has been taken out.

UTAH.

(From Our Special Correspondent.)

Asphaltum and Other Hydrocarbons.—For 10 days prior to September 2d, Messrs. Joseph Leiter, J. C. McMynn, V. Van Sickel of Chicago, and P. H. Kimberly of Sharon, Pa., were in and around Salt Lake City. Their visit related to a consolidation of the asphaltum and gilsonite lands of Northeastern Utah, so as to control the market for the products. The Government not allowing title to such lands on the Indian reservation is said to be an annoying obstacle to the general scheme. However, it is learned that all the gilsonite and elaterite beds over the Colorado line are now secured by the Leiter syndicate.

Bullion and Ore Shipments.—During the week ending September 2d there were forwarded East from the different Utah smelteries 18 cars, or 727,179 lbs., lead-silver bullion; 2 cars, or 78,870 lbs., copper bullion. In the same week from the different camps there were sent out 26 cars, or 872,370 lbs., of ore to be treated beyond the boundaries of the State. In August the shipments of lead-silver bullion were 97 cars, or 3,789,210 lbs.; copper, including the trust smelters

and the Utah Consolidated product, 16 cars, or 891,508 lbs.; the month's shipment of ore which went out of the State for treatment aggregated 151 cars, or 4,437,193 lbs.

Tintic Shipments.—In the week ending September 2d the shipments from the railroad points of the district were 121 cars of ore, 5 cars of concentrates and 1 bar of bullion. The ore total was made up of Mammoth, 21 cars; Bullion-Beck, 20 cars; Gemini, 15 cars; Centennial Eureka, 6 cars; Swansea, 7 cars; Grand Central, 6 cars; Hambug and Uncle Sam, 5 cars; South Swansea, 5 cars; Sunbeam, 4 cars; May Day, 3 cars; Four Aces, 3 cars; Godiva, 2 cars; Tesora, 2 cars; Joe Bowers, 1 car; and Tintic Iron, 21 cars of hematite for flux. Bullion-Beck forwarded 5 cars of concentrates and Sioux Mill 1 bar of bullion.

Salt Lake Water and Electric Power Company.—At the annual meeting, held in Salt Lake City, September 1st, Messrs. W. S. McCornick, Joseph Geoghegan, E. E. Lamson, A. H. Tarbet, A. G. Lamson, L. R. Rogers and Alvin Trowbridge were elected directors. Afterwards the directors named A. G. Lamson president; Mr. Tarbert, vice-president; Mr. McCornick, treasurer, and Mr. Geoghegan, secretary. The company's power plant, at Jordan Narrows, is supplying electric power to the Bingham Tunnel Company and to mines at Mercur.

Utah Consolidated Smelter.—September opens with everything running smoothly and the plant putting through nearly 200 tons of ore per diem. By September 15th it is probable that this figure will be increased to 250 tons.

Juab County.

(From Our Special Correspondent.)

Bullion Beck.—In another week the concentrating mill put in commission in April after a 2 years' rest, will be closed. Apparently the intention is not to mine non-shipping ore in the near future.

Grand Central-Mammoth.—Apparently the friction between these companies is reaching the point where some action in the courts will be taken.

Shoebridge Bonanza.—Colonel G. H. Heffron states that last week's reported ore uncovering was simply a pocket in porphyry, away from the vein. Shaft is 440 ft. and there is considerable water.

South Swansea.—Lumber is arriving for the buildings to be erected about the new main vertical shaft, which it is proposed to sink 100 ft. and connect with the old workings. The physical condition of the mine is excellent.

Salt Lake County.

(From Our Special Correspondent.)

Dalton & Lark.—The option of C. O. Whittemore, under which a part of the mines were unwatered and considerable exploration done in the past 90 days, expires October 1st. By September 10th the final reports will be handed in, and probably no decision will be reached till the end of the month. Ellsworth Daggett has charge of the expert work.

De La Mar-Wall.—Experimental tests, to prove the worth of the copper-bearing porphyry on this group, came to a sudden end on the arrival of Manager Cohen from the East the latter part of August. The Rogers mill is turned over to the owners, the boring contract, though but half completed, is settled for and all exploration is stopped short off. Colonel Wall states that he knows no cause for this change of programme, that Capt. De La Mar has till January 1st to make the next payment and he may not know before that date whether this move means an abandonment of the proposition or not. From the De La Mar headquarters nothing is to be learned.

Summit County.

(From Our Special Correspondent.)

Park City Shipments.—In the week of September 2d the smelter products marketed through the Mackintosh sampler aggregated 3,488,500 lbs., which was made up as follows: Silver King, crude, 1,428 lbs.; concentrates, 374 lbs.; Daly West, crude, 698,635 lbs.; Ontario, crude, 698,420 lbs.; Anchor, concentrates, 214,795 lbs.; Wykoff concentrates, 73,850 lbs. For August the total was 15,819,387 lbs., the contributors being: Silver King, crude, 4,521,770 lbs.; concentrates, 2,872,835 lbs.; Daly-West, crude, 2,398,910 lbs.; concentrates, 134,830 lbs.; Ontario, crude, 2,616,247 lbs.; Anchor, concentrates, 1,229,055 lbs.; Apex, concentrates, 246,000 lbs.; Loring, concentrates, 124,120 lbs.; Feeney, concentrates, 136,990 lbs.; Valeo, crude, 148,720 lbs; Wykoff, concentrates, 73,850 lbs.; Daly lease, crude, 71,940 lbs.; Cooney, concentrates, 38,100 lbs.

Alliance.—On September 1st at McCornick & Company's bank, Salt Lake City, on payment of $31,350 there was turned over to Colonel E. A. Wall 52,250 shares. Prior to this J. H. Conrad, who is the principal in the transfer, had secured 10,550 shares on the same basis of 60c., making 63,800 shares of the 100,000 issued. The outstanding 36,200 shares may be turned into the pool on the same basis. Mr. Conrad thus far has not made known what is to be done with the property.

Daly-West.—With the purchase of the Morgan property the debt was $160,000. Since work was resumed in May, though no shipments were made till June, the earnings were $185,000 in round figures.

Ontario.—All told, Ontario is furnishing employment to 200 men, of whom 130 are at the mine proper. The Marsac Mill is putting through 100 tons of tails from the Ontario Mill daily, and about the same saving is achieved as during last season's run. Shipments of crude ore are on the increase.

Putnam.—On this group, joining Daly and Daly-West ground on the south, a 500 ft. shaft is to be sunk under the direction of D. C. McLaughlin. Some hold that the Daly-West south vein apexes on the Putnam, also a part of the Anchor vein, and it is surmised that this shaft may have a bearing on the trespass suit brought by Daly-West against the Anchor.

WASHINGTON.

Okanogan County.

Bonanza.—This mine at Bossburg has paid a 1st dividend of ¼c. per share on 1,000,000 shares, or $2,500. It is shipping ore regularly, a car a day. Charles Theis, F. E. Goodall, W. C. Ufford and John Handy of Spokane are interested. A larger hoist and a compressor are to be installed.

(From Our Special Correspondent.)

Golden Zone.—This Loomis property has 4 tunnels, averaging 2,000 ft. on the vein. A 30 ton concentrator is being installed.

Gold Hill.—Fifty men are running 4 tunnels and 4 shafts, all on the vein at this Loomis property. Capital is furnished by Pittsburg parties.

Palmer Mountain Tunnel.—This is now in 2,200 ft. Machinery for reduction and treatment of ores near Loomis is considered.

Wehe.—A 500-ft. vertical shaft is being sunk upon which steam hoist is being placed and many surface improvements are under way. Fargo, N. D., and Milwaukee parties incorporated the company, which owns ground at Loomis.

West End.—This is an extension of the War Eagle Company, organized in Toronto to develop the property.

WEST VIRGINIA.

Joseph E. Sands of Fairmont recently took options on 2,000 acres of coal land on Shinn's Run. The purchase is for J. N. Camden, it is said, who will try to organize a coal land combine.

FOREIGN MINING NEWS.

AUSTRALASIA.

New Zealand.

(From Our Special Correspondent.)

Mineral Output for 1898.—According to the annual statement of Mr. Cadman, Minister of Mines, the total production of gold and silver in the colony during 1898 was 574,026 oz., valued at £1,113,798 ($5,568,890), an increase in value of £112,722 ($563,610) over the preceding year. Of other minerals 918,994 tons were raised, valued at £1,068,077 ($5,340,385), an increase in value of £189,346 ($946,730) over 1897. The increase was almost entirely due to the Mauri gum industry, the production of which for the year was 9,905 tons, valued at £586,767 ($2,933,835), against 6,641 tons, valued at £398,010 ($1,990,050), for 1897.

The values of the gold and the silver produced are not very clearly set forth, nor is the production in fine ounces stated, an omission which the statistician must view with sorrow, if not anger. However, it appears that during the 12 months ending March 31st, 1899, the export of gold was 303.525 oz., valued at £1,168,930 ($5,844,650), an increase of 52,033 oz. in quantity and £192,732 ($963,360) in value over the preceding 12 months. The Ohinemuri section of the Haurahi goldfield was responsible for the greater part of the increase. During the year 300,495 tons of quartz were treated for bullion valued at £723,154 ($3,615,770), a yield slightly over £2 8s. ($14) per ton. The gold obtained by dredging was valued at £169,689 ($848,445). This leaves £$276,087 ($1,380,435) as the value of gold obtained by ordinary alluvial mining. The dividends paid by quartz mining companies total £123,570 ($617,850), or rather more than one-sixth of the value recovered. There is no complete record of the dividends paid by dredging and alluvial mining companies, but it is stated that £65,218 ($326,090) was so paid during 1898 by public dredging companies.

Regarding the cyanide process, the report states that it is anticipated that in less than 6 years the purchase money will be repaid, and the process be free for use. It is mentioned that £489,767 ($2,448,835) worth of bullion was obtained during the year from cyanidation.

The number of men employed during 1898 in coal mining was 2,003; in quartz mining, 4,721; in dredging and alluvial mining, 8,951. There was one fatal accident in coal mines, 9 in quartz mines, and 12 in connection with dredging and alluvial mining.

Other points referred to in the statement are the Mining Act of 1898, which is a consolidation of the previously existing mining acts; and the outlook of the mining industry, which is described as resting on a sound basis.

Queensland.

Mount Morgan Gold Mining Company.—This company reports for July a total of 20,288 tons of ore crushed and treated by chlorination. The quantity is the largest reported this year, as the new works are now coming into successful use. The product was 12,981 oz. gold, an average of 0.64 oz. to the ton.

CANADA.

British Columbia—West Kootenay District.

(From Our Special Correspondent.)

Rossland Ore Shipments.—For the 8 months ending August 31st there were shipped about 100,000 tons of ore from Rossland mines. Of these the Le Roi shipped 56,600, the War Eagle 33,400, Center Star 6,600, Iron Mask 2,600, and the Evening Star 700. Compared with the corresponding period for 1898 there is an increase of 72%, the shipments then having been 58,000. The value of these 100,000 tons is grossly estimated at $1,700,000, of which only $210,000 so far have been returned as dividends, and this is wholly credited to the War Eagle. The entire quantity of ore officially returned from Rossland mines for 1898 was 111,282, valued at $2,482,000, or an average of $22.20 per ton. The nominal capital involved in the production of these 100,000 tons for the past 8 months amounts to $10,500,000. The figures showing the cash capital are not at present available.

British America Corporation.—The shaft at the Josie is down to the 400 ft. level. Some good pay ore was cut between the 300 and 400 ft. Sinking is to continue to the 400 ft. level.

At the No. 1 sinking continues to the 500 ft. level. A considerable quantity of shipping ore has been mined and is piled up in front of the shaft house.

Labor Troubles.—The number of working mines in the Slocan Division is gradually increasing, and the outlook for a resumption of work throughout the division is more promising.

Knob Hill.—A station has been cut at a point 350 ft. from the mouth of the tunnel at this Greenwood mine. It is now stated that the Knob Hill, Vatona and Old Ironsides are furnished with sufficient power.

Last Chance.—Work will be resumed with machines in September.

Le Roi.—Mr. Tregear says this ledge cut in grading the road has not been encountered in the underground workings.

Mother Lode.—The north drift at this mine near Greenwood is in 400 ft. At the 200 ft. level a station is being cut.

Silverton.—The ore shipments for the present year from this Slocan mine amount to 1,563 tons. The ore shipped was Galena and averaged 150 oz. in silver and 40% lead.

White Bear.—The plant consists of a 60 H.P. boiler, a 20-H.P. hoist engine, a 4-drill Rand compressor, etc., housed in a substantial building. The shaft is vertical, 4½ by 6½ ft. in the clear, down 320 ft. A number of drifts and crosscuts have been run. The ore in the various drifts and cross-cuts shows a fair percentage of copper pyrites and pyrrhotite. The shaft will be sunk to the 350 ft. level and a cross-cut run to intersect the ore seams.

Ontario—Algoma District.

The Minnesota Iron Company recently took an option on 4 claims of Thomas R. Smart of Wawa, Thomas H. Brooks of Thessalon, and Chas. Bush of Wawa City. The company was represented by Messrs. C. R. Ely, Murray and Van Avery. The price is said to be $18,000, $2,000 cash and the balance in 90 days. A large force of men will be put at work in the developing of the several properties, all of which are contiguous to the properties purchased by the company some weeks ago from A. Goetz and others north of Wawa City.

Ontario—Seine River District.

(From Our Special Correspondent.)

A. L. 282.—An option is out on this location. Four reports showed average values of about $25 to the ton. The main shaft is down 140 ft. and there is about the same amount of drifting.

A. L. 303, 304.—N. J. Upham, of Duluth, has a shaft 40 ft. deep. The ore is a dyke 52 ft. wide with average assays of about $5 in gold, copper and lead.

Hammond Reef.—This company has been unable to get timber, and its 30 head of stamps stand without a roof, ready to operate when the water power and electrical machinery is in place. An aerial tramway will be built. As soon as suitable trucks can be had 2 generators will be teamed through the woods from the Canadian Pacific Railroad, 45 miles away. This will be the first mine in the region to use electrical power.

Sawbill Gold Mining Company.—Some 1,100 ft.

north of the shaft a crosscut has cut the vein. Southwest of the shaft, on the same ore body, sinking is under way and a shaft down 25 ft. shows good values. There is a report that the reef has been struck in the bottom of the main shaft, 300 ft. down. The entire dyke seems to average some $7 a ton. The work has been done by a company that is to receive a third interest for development, but its contract has expired and a new company will be formed to work the mine.

Yukon District.

Consul McCook writes from Dawson City, under date of July 8th: About 2,000 people have left this place for St. Michaels during the past month, fully 1,800 of them bound for Cape Nome gold fields. The fares to St. Michaels for second-class passengers have been reduced to $35 with meals. On account of competition on the Upper Yukon, tickets to Seattle are now selling for $45, and to Lake Bennett at $15. Some $3,250,000 worth of gold dust has already been shipped from Dawson City to Seattle and San Francisco via St. Michaels. It has been proved that only very rich mines can be worked at a profit without machinery on account of the high price of labor. Hydraulic mining will soon have to be adopted. The opportunity is now open for capitalists to buy claims which will yield rich returns for the money invested. Many representatives of English companies are looking over the ground. The poor man's chance, so far as this country is concerned, is gone.

COAL TRADE REVIEW.

New York Sept. 8.

Anthracite.

The anthracite trade in Chicago territory is brisk, and is showing improvement at Lake Superior points. Retailers are stocking up, not knowing what figures they may have to pay when lake freights get even higher. In the East there is as yet little change. The producing interests found that certain concerns paid little attention to the agreement to sell no coal at July figures after August 1st. Then other resolutions were made to sell no more coal at such figures after September 1st. There are still rumors that coal is being sold at the old rate, however, and it is now very doubtful if the companies will try to advance prices another 25c. October 1st, after having such difficulty in securing the last advance. It is stated, but not officially, that the August production was 4,250,000 tons, a trifle of 750,000 tons over the estimated output for the month. This does not look like a very determined attempt to hold down production.

The market is now likely to be governed a good deal by the weather. Vessel rates are bound to go up, and as there are no attempts to force coal on the market nor any signs of a serious disagreement among the mining and transportation companies, consumers may have to pay higher figures than now as soon as fall buying is fairly under way.

The labor troubles at the collieries so far have been sporadic and there is now little danger of any general break between miners and operators.

We quote free burning anthracite f. o. b. New York at $4 for stove and nut, with other sizes in proportion.

Notes of the Week.

The Schuylkill Coal Exchange states that its drawn-to-return rate for coal sold in August was $2.40 and rates of wages to be paid in last half of August and first half of September is therefore 3% below the $2.50 basis.

Bituminous.

The seaboard soft coal market continues extremely active; the demand is still in excess of the supply available in spite of the best efforts of operators to get coal forward. The supply of cars at the collieries remains the chief hindrance to a larger output. Cars are not only in short supply, but are supplied irregularly, the number being anywhere from 60% to 85% of the whole number wanted. The heaviest demand for coal, as for several weeks is from points along Long Island Sound and beyond Cape Cod. This demand is due partly to the great activity in all the manufacturing industries and partly to an unusually dry season which has compelled plants ordinarily run partly by water power to depend wholly on steam. Prices for spot coal slowly rise. Several companies are out of the market altogether on transient business. We have heard of one instance wher $2.80 for coal alongside at New York was refused. In the seaboard vessel market vessels are in fair supply and rates are firm. There is, however, so much trouble in getting coal to tidewater that shippers having immediate loading to offer continue to get reductions from the current figures. We quote freights from Philadelphia as follows: Providence, New Bedford and the Sound, 70c.; Boston and Portland, 85c.; Portsmouth and Salem, 85@90c.; Bath, 85c.; Bangor, $1.

We continue to quote best grades of coal, $1.65 at Philadelphia and Chesapeake Bay ports, and $2.25 at New York, but for anything like immediate delivery buyers may have to pay from 10 to 30c. over these figures.

Birmingham, Ala. Sept. 4.

(From Our Special Correspondent.)

The coal industry in Alabama continues to thrive, and there is a steady demand for the product. The reports given out in the last few days are to the effect that the prices for coal are beginning to stiffen. The mines in this State are all in full blast with the exception of the Milldale and Brookwood mines, in Tuskaloosa County, where the United Mine Workers' members refuse to work because of no settlement on the scale adopted July 1st. There are, however, a few men at work in these mines, but the output is very small as compared to what it usually is at the places.

In Jefferson County there is much work being done in the mines, and the operators are advising the regular customers to begin laying in their winter supply now. The mines of the Tennessee Coal, Iron and Railroad Company are all working full. In addition to the orders on hand this company has a big demand from its own furnaces and coke ovens. The company has in the course of opening good mines at Pratt City. The production at the mines at Pratt City during the month of August was a record breaker; 191,666 tons of coal were produced, which surpassed previous records by several thousand tons. The shortage of railroad cars is being felt to some extent in the coal industry in this State.

The new tipple and dumping arrangements at the Sayreton mines, near North Birmingham, belonging to the Republic Iron and Steel Company, were put into use during the past week and the capacity of the mines will be greatly increased. Superintendent L. W. Johns expects to keep up the work of improvement.

Chicago. Sept. 5.

(From Our Special Correspondent.)

Anthracite Coal.—September opened up with an advance of 25c. per ton on all sizes of anthracite coal, wholesale and retail being both affected. The advance was fully expected, and has caused no surprise whatever. The cause of the advance is the scarcity of transportation facilities to get coal here, freights by lake and rail reaching extremely high figures on account of the scarcity of cars and boats. Business has been very good, dealers in general being aware that even higher prices are likely to occur. Contracts have been placed at the 25c. advance, which will hold good all of September, though from present prospects another 25c. will be added October 1st. Present circular prices are $5.25 for broken and $5.50 for egg, stove or chestnut.

Bituminous coal continues to be bought in large quantities; the railroads are heavy purchasers, and manufacturing lines are taking advantage of the present low price on soft coal to lay in large supplies. Most soft coals have gone up 10 or 15c. a ton, and are likely to go higher.

Coke is in great demand, but the supply is very short. Connellsville coke is now quoted $4.75 and West Virginia $3.75@$4.

Pittsburg. Sept. 7.

(From Our Special Correspondent.)

The railroad coal combination has advanced prices. The mines are being operated on account of the Pittsburg Coal Company, and will be until the combination takes complete control after the examination of the titles to the properties. The dealers were notified that on and after September 1st the price of 1¼-in. coal would be $1 a ton; ¾-in., 90c., and run of mine, 80c. This is an advance of from 5 to 15c. a ton. Some operators had been selling at 95c., but most of them received but 85c. This is the price at the mine, the freight to Pittsburg ranging from 25 to 40c. River coal is cheaper than railroad coal, but prices are expected to go up within a week. It is being sold afloat in the harbor at $3.75@$4 for 100 bus. The estimated output of river coal for this year is 150,000,000 bus., or 27,000,000 bus. more than last year. The production to date is 85,000,000 bus. The low water has prevented shipments to the Southern ports, and prices have advanced, particularly in New Orleans. The latest advance puts the price up to 28@30c. a barrel, an increase of 10c. a barrel. The shipments of Pittsburg coal to New Orleans last year were 900 boats of 25,000 bus. each and 140 barges of 14,000 bus. each. The shipments so far this year have been 1,200 boats and 150 barges. The river coal combination when it begins operations, which will probably be about October 1st, will employ about 8,000 diggers and fully 5,000 men to handle the product.

Connellsville Coke.—The demand continues to be heavy, but there was a falling off in shipments owing to the lack of cars. There are 18,122 ovens active and 985 idle or building. A new company is preparing to engage in the production of coke. A charter was granted yesterday at Harrisburg to the Eureka Fuel Company, with a capital stock of $1,000,000. Over 1,000 acres of valuable coal lands have been secured in the Connellsville field, and contracts will be awarded next week aggregating $350,000 for the opening of mines and building of ovens. The production of coke last week was 195,968 tons, as compared with 198,059 tons the week previous. The shipments aggregated 10,010 cars, distributed as follows: To Pittsburg and river tipples, 3,148 cars; to points west of Pittsburg, 5,268 cars; to points east of Connellsville, 1,594 cars. This is a decrease of 829 cars as compared with the week previous.

SLATE TRADE REVIEW.

New York. Sept. 8.

At home consumption keeps up well, and prices are satisfactory. In blackboards and school slates, however, business is quieter.

Shipments from the quarries are better, and the demands for certain sizes of roofing slate are being filled slowly.

Exporters are not as enthusiastic as they have been, and each week shows a falling off in the movement abroad. The exports of all kinds of slate from the United States in July amounted to $109,368, against $124,132 in the same time last year, and $111,173 in July, 1897. For the 7 months of the present year the exports were valued at $788,192, showing a decrease of $14,273, as compared with the corresponding period of last year. This falling off was due largely to the smaller shipments of roofing slate to the United Kingdom.

The list of prices per square for No. 1 slate standard branch f. o. b. at quarries is given below:

Prices of Roofing Slate.

Size, inches	Monson or Br'n ville.	Bangor.	Bangor Ribbon.	Alb'n, or Jackson Bangor.	Lehigh.	Peach Bottom.	Sea Gr'n.	Unfad'g Gr'n.	Red.
	$	$	$	$	$	$	$	$	$
24 x 14	6.10	3.50	3.00	3.35	3.40	4.85	3.00	.....	.....
24 x 12	6.60	3.50	3.00	3.35	3.40	5.00	3.00	3.75	.....
22 x 12	6.60	3.50	3.25	3.50	....	5.00	3.00	3.75	.....
22 x 11	6.50	3.75	3.25	3.50	3.40	5.00	3.00	4.00	.....
20 x 12	6 90	3.75	.....	3 50	3.40	5.00	3.00	3.75	.....
20 x 11	6.80	.....	.....	4 00	....	5.00	3.00	....	.....
20 x 10	6.80	4 50	3.50	4.00	3.75	5.10	3.25	4 25	9@10¼
18 x 12	6.80	3 75	....	3.50	....	....	3.60	3.50	.....
18 x 11	7.00	....	....	....	....	....	3.00	3.75	.....
18 x 10	7.20	4.50	3.50	4 00	3.75	....	3.00	4.00	9@10¼
18 x 9	7.10	4.50	3.50	4.00	3.75	5.10	3 00	4 25	9@10½
16 x 12	6.80	3.75	....	3.50	....	....	2.85	3.50	.....
16 x 10	7.10	4.25	3.50	4 00	3.75	5.00	2.85	4.00	9@10½
16 x 9	7.00	4.25	.....	4.00	3.75	5.10	2.85	4.25	9@10½
16 x 8	7.20	4 50	3.50	4.00	3.75	5.10	2.85	4 25	9@10½
14 x 10	6 60	3.75	3.25	3.35	....	5 00	2.75	3.75	9@10½
14 x 9	6.50	....	....	.....	....	....	2.75	3 75	9@10½
14 x 8	6 60	3.75	3.25	3.35	3.40	4.85	2.75	4.25	9@10½
14 x 7	6.40	3.75	3.25	3 35	3.40	4.85	2.50	4.25	9@10½
12 x 10	5.80	....	.	....	.....	...	2.50	3.25	....
12 x 9	5.60	.	.....	....	....	....	2.50	3.25	.....
12 x 8	5.50	3.50	.....	3.35	3.25	4 60	2.50	3.50	8¼@9
12 x 7	5.00	3.25	.....	3.35	3.25	4.60	2.50	3.50	8¼@9
12 x 6	4.80	3 25	.	3.35	3.25	4.50	....	3 50	8¼@8½

A square of slate is 100 sq. ft. as laid on the roof.

In Brownville and Monson delivery quotations can be had somewhat lower than above, which is also true of other brands. No. 1 Bangor are 50c. extra when full 3/16 in. thick, and Peach Bottom 25c. extra per square. Intermediate sea green, $2.25@$2.45 per square, according to size.

CHEMICALS AND MINERALS

(For further prices of chemicals, minerals and rare elements, see page 330.)

New York. Sept. 8.

Heavy Chemicals.—In alkali sales of domestic for prompt have been made by second hands around 85c. per 100 lbs. f. o. b. works, while for future delivery makers are booking contracts up to 75c. per 100 lbs. f. o. b. works. In foreign alkali large sales are reported at 77½@80c. for future delivery. Caustic soda continues scarce for immediate shipment, as makers are about sold up for this year; second hands are selling at quotations. On next year's and 1901 account large orders for high test domestic caustic soda have been taken around $1.60 per 100 lbs. f. o. b. works. Sal soda shows an improvement. Bleaching powder, prime Liverpool, is scarce on spot and prices are nominal, while a good business has been done in outside makes at quotations. Chlorate of potash is in good request, and prices are easier. Bicarb. soda moves slowly, though a fair export trade is reported. A large trade is doing in monohydrate crystals for future shipments. We imported this week 182 bbls. and 50 casks bleaching powder from Antwerp, and 240 casks from England. Receipts of domestic chemicals included 1,450 kegs, 72 bbls. and 745 sacks soda ash, and 180 drums caustic soda.

The imports and exports (of foreign chemicals) of the United States in July included the following, the figures in parenthesis being for the corresponding month last year: Bleaching powder, imports, 7,091,042 lbs. (8,699,961 lbs.); exports, nothing. Soda ash, imports, 1,515,143 lbs. (4,636,495 lbs.); exports, nothing (505,836 lbs.) Sal soda, imports, 896,000 lbs. (313,600 lbs.); exports, 14,000 lbs. (nothing). Caustic soda, imports, 805,251 lbs. (1,912,541 lbs.); exports, 123,896 lbs. (66,533 lbs.). Chlorate of potash, imports, 325,970 lbs. (243,617 lbs.); exports, 1,120 lbs. (nothing).

The exports of domestic chemicals in July consisted of 38,505 lbs. pot and pearl ashes, against 55,403 lbs. last year.

Articles.	Domestic.		Foreign.
	F.o.b. Works.	In New York	In New York.
Alkali, in bags.	70@72½c.	80@85c.	80@85c.
Caustic Soda, high test	$1.55@$1.60	$1.65@$1.70	$1.60@$1.70
98% powd.		2 75@ 3.00	
60@74 % powd.		2. 2½@ 2.25	
Sal Soda	60@65c.		65@67½
" conc.	1.35@1.60		1.60@1.65
Bicarb Soda	1.12½@1.25		2.12½@2.25
" " extra	3.25@3.50		
Bleach. Pdr., Eng. prime			1.50@1.65
other br'nds.			1.40@1.50
Chl. Pot cryst	8.75@9 00		9.50@9.75
" powd.	9.25@9.50		9.25@9.37½

Prices are generally for large quantities, and in many cases depend upon make, test and package.

Yellow Prussiate of Potash.—Market is firm, and a further advance in price is expected. Sales are now being made at 19c. per lb., ½c. higher than a few days ago. Makers are not anxious to sell below this figure. We understand they are making deliveries on old contract at 15@16c. per lb.

Paints.—The National Lead Company announces a new schedule for white lead, dry or in oil, red lead and litharge in kegs, as follows: In lots of less than 500 lbs., 6½c. net; in lots of 500 lbs. or over, 6c.; dry white lead, in bbls., ½c. per lb. less than price in kegs; red lead and litharge, in bbls. and half-bbls., same as price in kegs; white lead, in 12½-lb. tin pails (packed in 100-lb. cases), 1c. per lb over price in kegs; white lead, in 25-lb. tin pails (packed in 100-lb. or 200-lb. cases), ½c. per lb. over price in kegs; white lead, assorted, in 1-lb., 2-lb., 3-lb. and 5-lb. cans (packed in 100-lb. cases), 1½c. per lb. over price in kegs. Terms: On lots of 500 lbs. and over, 60 days or 2% discount for cash if paid in 15 days from date of invoice—f. o. b. at New York. Quantities: To make either of above-required quantities, any assortment of packages of either, or all of the above articles may be counted.

Acids.—The combination in oxalic acid is practically dissolved, owing to internal competition, aggravated by two new makers. For this year's business, 6c. per lb. is quoted, and orders over 1900 will be booked at 5¾c., and a lower price is likely to be offered. Acetic and muriatic acids are in fair request, while sulphuric showed a good trade in August. The exports of blue vitriol from the United States in July amounted to 488,736 lbs., valued at about $5 per 100 lbs., against 427,463 lbs., valued at $3 in July last year. Exports of all other acids in July, 1899, amounted to $11,805, against $30,762 in the same month last year.

Quotations are in large lots delivered in New York and vicinity, per 100 lbs. unless otherwise specified.

Acetic, com. No 8.	$1.50	Nitric, 38°.....	$3.75@ 3.80
Blue Vitriol, best	5.25	Nitric, 40°.....	4.00@ 4.05
Chamber, 50°, ton.	11.50@12.00	Nitric, 42°.....	4.62@ 4.65
Muriatic, 18°.	1.50@ 1.60	Oxalic.....	5.75@ 6.00
Muriatic, 20°.	1.25@ 1.30	Sulphuric, 66°....	1.10@ 1.15
Muriatic, 22°....	1.40@ 1.50	Sulphurous, 100%	
Nitric, 36°.....	3.50@ 3.55	SO_3 anhydrous.	8.00@10.00

Brimstone.—Imports at New York this week were 7,500 tons, to be delivered principally on contract. Spot best unmixed seconds are quoted $21.25@$21.50, and shipments, $20.50@$20.75 per ton, while thirds remain $2 less per ton. In July the United States imported 7,021 tons, as against 21,163 tons in the same month last year. On August 25th 2,000 tons Japanese sulphur were imported in San Francisco.

Pyrites.—Demand is good, and prices are unchanged. The United States imported in July, 44,672 tons, as against 29,450 tons last year. We quote American pyrites as follows: Mineral City, Va., lump ores, $3.25 per long ton (basis 42%), and fines, $3; Charlemont, Mass., lump, $5.50, and fines, $4.75; Pilley's Island, lump, $6.50, and fines, $4.50 per long ton, delivered in New York. Spanish pyrites, 12@14c. per unit, according to percentage of sulphur contents, delivered ex-ship New York and other Atlantic ports. Spanish pyrites contain from 46% to 51% of sulphur; American, 42% to 44%, and Pilley's Island, N. F., 50%.

Phosphates.—The rush to the new fields continues, especially in Tennessee. Some very good phosphate has been found, but its area is limited. Meantime the demand is quieter, but prices are unchanged. The shipments of high grade Florida rock from Savannah, in August, amounted to 8,350 tons, all to Hamburg, Germany. This makes the total shipments from this port in the eight months of this year, 42,217 tons, all foreign rock. The domestic shipments of rock from Charleston, S. C., from September 1st, 1898, to August 25th, 1899, amounted to 105,763 tons, an increase of 12,382 tons over the corresponding period of 1897-98. The exports from the United States in July amounted to 101,199 tons, against 76,146 tons in the same month last year, while the imports were 3,973 tons, against 5,737 tons. For the seven months ending July, 1899, the total exports were 527,183 tons, showing an increase as compared with the corresponding period last year. Latest advices from Europe state that Florida high grade rock is quoted 8⅞d. per unit for all positions to 1901; Florida land pebble, 8d., and Peace River, 7½d., while Tennessee rock is offered at 7¼d. Algerian 63@70% is quoted 7¼d., and 58@63%, at 7d. per unit. All quotations are c. i. f. United Kingdom or North Sea ports. Freight rates from America continue high.

We quote: Florida high grade, 75@80% rock, $10 per long ton f. o. b. Fernandina. The freight rate to New York is about $2 per ton. Florida land pebble, 68@73%, $7@$7.50 per ton, delivered in New York. Florida Peace River rock, 58@63%, $4.50 per ton f. o. b. Punta Gorda. South Carolina, crude rock, $4.25@$4.50; hot-air dried, $4.50@$5 per long ton f. o. b. Fetteressa, S. C. Tennessee phosphate rock, $4 f. o. b. mines for export, guaranteed 75% bone phosphate of lime and 3@4% iron and alumina (ex-vessel New York, $9@$10); and $2.50@$2.75 f. o. b. for mixed blue-gray Hickman County rock, guaranteed 65% bone phosphate, and not over 3% iron and alumina. The difference in the price of this phosphate and Florida high grade is owing to the higher percentage of iron and alumina in the Tennessee rock. Concentrated phosphates, 13@15% av., P^2O^5 60@62½c. per unit at sellers' works. Acid phosphate, $6.25 per ton for 14% in bulk f. o. b. Charleston, S. C.

Fertilizing Chemicals.—More inquiry from the South and some export business is reported in blood and tankage. Imports this week included 4,500 bags muriate of potash, 1,000 bags sulphate potash, two lots each of crude kainit and manure salt, and 536 bags sulphate of ammonia. In July the United States imported 10,820,844 lbs. muriate of potash, against 3,703,327 lbs. last year. We exported in the same month $5,319 worth of fertilizers (not including phosphates), against $2,158 in July, 1898.

Articles.	F. o. b. Wks.	In N. Y.
Potash, muriate, 80@85%..100 lbs.		$1.78
" " 95% "		1.81
" sulphate, 90% "		1 98½
" " 96% "		2.10½
" d'ble m're salt, 48@53%..100 lbs.		66c.
" " " " 30% "		89c.
" kainit, 12.4%. long ton.		8.70@8.95
" sylvanit.. per unit.		37@38c.
Sulph. Am., gas (25%)....100 lbs.		3.10@3.12½
" " bone..... "		2.95
Blood, dried, h-gr. Chi. per unit	$1.75	
" " " N.Y., "		1.85
Azotine..... "	1.75@1.80	1.80@ 1.85
Bone black, diss., 17@18%...ton		16.00@16.50
Fish scrap, acid..... "	10.50@11.00	12 50
" " dried..... "	19.50@20	21 50
Tankage h. gr., Chicago.... "	15.00@15.50	21.00
" concentrated.. unit.	1.45@1.50	1.90@1.95
" bone.. .... .. ton.		20.00@21.00
Bone, ground ..... "		23.50@25.00

The quotations on potash are on the basis of foreign invoice weights, tares and analysis, in quantities of not less than 500 tons bulk salts or 50 tons concentrated salts.

Nitrate of Soda.—Talk of another combination between producers has helped to strengthen the market. Spot is held at $1.60@$1.62½ per 100 lbs., and futures are quoted up to $1.65, according to position. On August 29th a cargo of 3,025 tons of nitrate of soda arrived in San Francisco from Peru for the powder works, making 5,758 tons imported in August from that country. Five more cargoes are expected. The United States imported in July 19,045 tons nitrate of soda, as against 9,706 tons in 1898. None of this was re-exported.

Messrs. Mortimer & Wisner's monthly statement of nitrate of soda, dated September 1st, gives the following statistics:

	1899.	1898.	1897.
	Bags.	Bags.	Bags.
Imp. into Atlantic ports from West Coast S. A., from Jan. 1 to date.	601,403	593,040	393,041
Imp. from Jan. 1 from Europe	.....	55,171	.....
	601,403	648,211	393,041
Stock in store and afloat Sept. 1, in New York	39,012	70,881	168,259
Boston	.....	.....	1,166
Philadelphia	40,250	10,000	2,102
Baltimore	750	9,600	1,000
Norfolk, Va.	.....	.....	.....
Charleston	.....	.....	.....
To arrive, due Dec. 15, 1899.	335,000	329,000	149,000
Vis. supply to Dec. 15, 1899.	415,012	419,481	261,527
Stock on hand Jan. 1, 1899.	58,406	15,383	123,593
Deliveries past month	134,069	103,430	86,014
Deliveries since Jan. 1	579,797	573,113	404,107
Total yearly deliveries	.....	967,525	710,971
Prices current, Sept. 1	1.60@1.62½	1.45c.	1.65c.

Saltpeter.—The arrivals in August aggregated 6,792 bags, as against 1,294 bags last year. Consumption in the same month was 8,411 bags, as compared with 3,517 bags in August, 1898. Stocks on hand September 1st were 8,687 bags, against 6,314 bags at the same time last year. Expected arrivals amount to 7,413 bags, as against 9,055 bags last year, making the apparent supply 16,100 bags, as against 15,369 bags in 1898. Crude quoted at 3½@3⅝c. per lb. and refined, 4@4½c.

Liverpool. Aug. 29.

(Special Report of Joseph P. Brunner & Co.)

There is little change in heavy chemicals since our last report, business continuing very brisk, while prices are well maintained. Soda ash is meeting with a good inquiry, and for some markets makers are refusing orders at prices which would have been accepted a short time ago. We quote maximum range for tierces, about as follows: Leblanc ash, 48%, £4 5s.@£4 10s.; 58%, £4 10s.@£4 15s. per ton net cash. Ammonia ash, 48%, £4@£4 5s.; 58%, £4 5s.@£4 10s. per ton net cash. Bags 5s. per ton under prices for tierces. Soda crystals are fairly active at £2 17s. 6d. per ton, less 5% for barrels with special quotations for certain favored markets. Bags, 7s. per ton under price for barrels. Caustic soda is in light supply and the recent advance is fully maintained, while a difficulty is experienced in placing orders for early delivery on account of makers being so well sold. Nearest spot values are as follows: 60%, £7; 70%, £8; 74%, £8 10s.; 76%, £8 15s. per ton net cash.

Bleaching powder keeps very steady, £5@£5 5s. being about spot quotations for hardwood packages, with an upward tendency.

Chlorate of potash is rather idle, at nominally 3½@3⅝d. per lb. for crystals and 3⅝@3¾d. per lb. for powdered, as to quantity.

Bicarb. soda is in moderate request at varying prices, according to destination, ranging from £5 5s.@£6 15s. per ton, less 2½% for the finest quality in 1 cwt. kegs, with usual allowances for larger packages.

Sulphate of ammonia is quiet at about £12 12s. 6d.@£12 15s. per ton, less 2½% for good grey 24@25% in double bags f. o. b. here. There is not much inquiry, but at the same time there is little offering.

Nitrate of soda receives little attention from buyers, and is quoted at from £7 15s. to £8 per ton, less 2½% for double bags f. o. b. here, as to quality and quantity.

Valparaiso, Chile. July 29.

(Special Report of Jackson Bros.)

Nitrate of Soda.—Owing to the apparent probabilities of a future combination, coupled with a decided firmness on the part of producers, some interest has been shown for the purchase of 95%, deliveries during next year at our last closing quotations of 5s. steamer terms, but only a few monthly parcels changed hands at this figure, other sellers asking 5s. 1d. alongside, which was paid for 3,500 tons spread over the last 7 months of 1900. For this year some business was done at the commencement of the fortnight at 5s. 1d. @5s. 1¾d. alongside for 95%, August to October, but owing to the reticence of sellers as high as 5s. 2½d. alongside has had to be paid for nearby shipments of 95% to fill vessels which were unprovided for. In the refined quality, February to June, 1900, has fetched from 5s. 1½d.@5s. 2d. steamer terms and nearby, 5s. 3d. The latest advices regarding the prospects of the proposed combination are not at all encouraging; but for all that, producers have still confidence in its realization and maintain their prices. The total calculated consumption of the whole world for the first 6 months of 1899 was 21,118,500 qtls., against 19,526,000 qtls. last year, showing an increase of 1,592,500 qtls., or, say 8.15%, for this year. We quote 95% August, 5s. 1½d.; September-December, 5s. 2d.; 96%, 5s. 3d., and for 1900, 95%, 5s. ½d., and 96%, 5s. 2d., all ordinary terms, sellers. The price of 5s. 1½d. with all round freight of 27s. 6d. stands in 7s. ½d. per cwt. net cost and freight without purchasing commission, against quotations of 6s. 10d. for August, and 6s. 11½d. for October sailings. Reported sales are 728,000 qtls., of which only 115,000 qtls. were refined nitrate of soda.

IRON MARKET REVIEW.

NEW YORK, Sept. 8, 1899

Pig Iron Production and Furnaces in Blast.

Fuel used	Week ending Sept. 9, 1898.		Week ending Sept. 8, 1899.		From Jan., '98.	From Jan., '99.
	F'ces.	Tons.	F'ces.	Tons.	Tons	Tons.
An' racite	25	16,750	42	37,125	805,436	1,045,418
Coke	140	184,775	180	225.275	7,044,371	7,726,279
Charcoal.	22	6,625	22	6,275	210,654	191,123
Totals	187	208.150	244	268,675	8,060,461	8,962,820

But little new is to be said of the iron trade this week. The same story of active demand and rising prices, which has been given for weeks past, is to be repeated.

In pig iron, Bessemer this week reached the highest point yet made, with sales at $23.75 a ton, Pittsburg delivery. Foundry and forge also re-

corded advances in the West, while Alabama pig of all grades is quoted at another advance of 25c. a ton.

Steel is also at high levels, and in fact it is not easy to fix a price for billets, as quotations vary so much with time of delivery and the necessities of buyers. No billets are to be had for early deliveries, unless small lots can be picked up from second hands; and for these fancy prices are asked. In finished materials the case is very much the same. There are many complaints of delay in deliveries on contracts.

The high prices do not seem to deter buyers, and there are just as many inquiries as ever, including a fair number for export. The general belief that the present season of activity will continue well into next year, and perhaps through it, helps to make the situation free from excitement, in spite of the great demand and the extraordinary prices.

Birmingham, Ala. Sept. 6.

(From Our Special Correspondent.)

There is no doubt that the pig iron quotations are looking up and recently advances occurred in all grades. It is even stated that some orders were refused by the furnace-men in this district for delivery at prevailing figures during the months of January, February and March, and that orders are being offered, delivery on which can be made as late as the last of the coming year.

During the week just past it was given out that a new furnace would be built in the district by the Republic Iron and Steel Company; an old furnace would be rehabilitated by a new company—the Trussville Furnace—and put in blast shortly; that work on the steel plant would be rushed; that work on the repairing of the new furnaces taken in by the Sloss-Sheffield Steel and Iron Company in its reorganization would be put in condition at once for blast, and several other matters.

Local purchasers buying in small lots have to pay an advanced price over the quoted figures for the product. The general conditions, according to furnace-men, continue strong and during the past week some very healthy orders were given in this district, and inquiries are still coming in.

The Trusville Furnace, Mining and Manufacturing Company was incorporated in Birmingham during the past week by Messrs. Henry W. Perry, Tunstall B. Perry and Robert D. Smith; capitalization $250,000. The purpose of the incorporation is to carry on a general mining and manufacturing business. This company is going to operate the blast furnace at Trussville, this county, and during this week contracts will be let looking to the repairing of the plant. Just as soon as possible it will be put in blast.

The following are the quotations given for pig iron now: No. 1 foundry, $17.50; No. 2 foundry, $16.25@$16.50; No. 3 foundry, $15.50; No. 4 foundry, $15; gray forge, $14.75@$15; No. 1 soft, $17.50; No. 2 soft, $16.25@$16.50.

Finished iron is still strong in demand, with a number of inquiries being received. The car works throughout the South are working hard and are demanding much finished iron and also structural material. The mills here, at Gate City, and at Sheffield, are working on full time and two of them day and night. The forces at the establishment named are being increased just as rapidly as men can be secured.

Buffalo, N. Y. Sept. 5.

(Special Report of Rogers, Brown & Co.)

August closed a record-breaking month, and September starts out at the same gait. Many of the larger consumers who held back contracting for 1900 iron now show a decided inclination to cover for at least a good share of their probable wants for the first quarter and first half of next year. Local furnaces are again reaching the danger point in booking orders for delivery after January 1st, and have advanced prices to correspond. We quote for cash f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $22.25@$22.50; No. 2 strong foundry coke iron, Lake Superior ore, $21.25@$21.50; Ohio strong softener, No. 1, $22@$22.50; Ohio strong softener No. 2, $21.25@$22; Jackson County silvery No. 1, $29; Southern soft No. 1, $22; Southern soft No. 2, $21; Lake Superior charcoal, $23; coke malleable, $22@$23.

Chicago. Sept. 5.

(From Our Special Correspondent.)

Pig Iron.—The demand for both Northern and Southern pig irons remains very large, and the sales each week count up to large figures. All of the business now being contracted for is for delivery the first half of the coming year; there does not appear to be much inclination on the part of consumers to contract beyond July, 1900. The scarcity of pig iron has caused the foundries much trouble, obliging them to shut down from time to time, and in a season wherein time is money. Present quotations are: Lake Superior charcoal, $23@$25; local foundry No. 1, $20@$21; No. 2, $20@$20.50; No. 3, $19.50@$20; local Scotch foundry No. 1, $20.50@$21; No. 2, $20@$20.50; No. 3, $19.50@$20; Southern Coke No. 1, $20.65@$20.90; No. 2, $19.65@$19.90; No. 3, $19.15@$19.40; Southern No. 1 soft, $20.65@$20.90; No. 2 soft, $19.65@$19.90; Jackson County silveries, $28@$29; Ohio strong softeners, $23@$24; Alabama car wheel, $22@$23; malleable Bessemer, $22.50@$23.

Bar Iron.—Sales are large, a good line of business coming in from week to week. Car-builders are free purchasers. Mills are somewhat inclined to not press for sales at present. Common iron is quoted 1.95@2c. and steel bars, 2.10c.

Structural Material.—Small lots are being placed quite freely, mills being unable to handle any large business for immediate delivery. The advance in prices has not caused any decrease in demand. Prices are: Beams, 15 in. and under, 2.15@2.30c.; 18 in. and above, 2.25@2.35c.; plates, 2.75c.; tees, 2.20@2.30c.

Cleveland, O. Sept. 4.

(From Our Special Correspondent.)

Iron Ore.—The principal feature of the iron ore situation during the present week is another advance in the carrying rates. The rate from the head of Lake Superior has reached $1.80@$1.85 per ton and it is thought that $2 will be paid before the end of the present week. The rate from Escanaba is now $1.30 per ton and $1.50 from Marquette. The above are the highest rates that have been for years. Higher rates have been paid in years past when the facilities for loading and unloading were less perfect. It is therefore safe to say that the vessel-men never before carried ore at rates which were as profitable as the present ones. Shippers are compelled to pay these high prices on account of the strong demand for vessels to carry grain. Agents of mining companies who made large contracts for tonnage last spring are now congratulating themselves on their good fortunes. The market continues as quiet as it has been for several weeks so far as sales are concerned, while the shipments from the upper lakes are lively.

Quotations are as follows: Specular and magnetic ores, Bessemer quality, $4@$4.25; specular and magnetic ores, non-Bessemer, $3.25@$3.75; red hematite ores, Bessemer quality, $3.75@$4.25; red hematite ores, non-Bessemer quality, $2.75@$3.25.

Pig Iron.—The pig iron market continues very strong. The activities during the past week show a larger volume of trade than during the previous week. Except in cases of a few possible small odd lots of iron for immediate delivery the sales have been for delivery during the first half of next year. Some of the manufacturers still refrain from buying, thinking that there will be a reduction in the present prices, but the majority of them regard them as permanent. No higher selling figures have been reached than were reported a week ago, but every feature of the market is firm at figures already named.

The quotations f. o. b. Cleveland are as follows: Lake Superior charcoal, $23.50; Bessemer, $22; No. 1 foundry, $22; No. 2, $21.50; No. 1 Ohio Scotch, $21.50; No. 2, $21; gray forge, $18.25.

Philadelphia. Sept. 7.

(From Our Special Correspondent.)

Pig Iron.—The past week has been one of exceptional quiet, though anxiety has been at fever heat. Comparatively few large sales have been made, but this was not the fault of buyers, who have made offers for supplies in some cases above market prices. Basic iron would sell if it could be had. Correspondence with representatives of Southern iron makers has not resulted in very much business. The advance in forge iron was the feature of the last week, and even at current quotations—$20 and in one or two cases over that—not half as much iron as is wanted could be had. The advance of No. 1 X to $24 surprised no one, nor will its inevitable advance to $25 make any ripple on the market. No. 2 iron is being negotiated for late delivery and for delivery next year.

Billets.—It is too soon to say what will come out of the negotiations now pending by Eastern buyers of billets for supplies. Just what billets would sell for no one knows. The quotation given is $40, but that does not count. There are a few most urgent requirements now pressing for acceptance.

Merchant Bar.—There is an urgent demand from small consumers and there would be an urgent demand from large ones if they could be accomodated. This summarizes the entire situation. Several old mills are now making iron, and a few of them are with difficulty getting stock. Quotations for refined are 2.10c.; tested and special steel bars, 2.20@2.50c.

Skelp.—Within a day or two some large transactions have been closed with Western people for skelp, but at quotations which cannot be yet published. The skelp mills have a great deal of business offered, and their largest customers are likely to come from the West.

Pipes and Tubes.—It is only repeating what has been said before that the millmen are offered more work than they can accept, but it is to be noted that order is coming out of confusion. A large amount of business is to be done this month, and tubes will be wanted far beyond present capacity.

Sheets.—Sheet iron makers report to-day that they hope to be able to take care of their customers' interests with less friction from this out. Everything is running along smoothly at the mills, but orders have sometimes to be broken up and supplies divided around. The requirements for corrugated material are quite heavy.

Merchant Steel.—Agents representing mills are not quite so confident to-day as they were last week of supplying their customers this fall. Within a few days they have been called upon to consider exceptionally large requirements. It is announced in this market that a higher range of quotations is likely to be announced.

Plates.—It is impossible to make a report on this market. One big plant is partly idle for want of material. The big Hillman shipyard is to be reorganized to build small craft. Contracting engineers are about ready with specifications for large office building work. Fully 3c. has been paid for steel plate for early delivery.

Structural Material.—Representatives of mills have nothing to add excepting that they could sell much more than they have at higher prices than are quoted if they could furnish the material.

Steel Rails.—Brokers who keep in touch with steel rail business anticipate some large orders this month, particularly in girder rails, for which there is now an active demand. Quotations are $34 for standard sections

Old Rails.—Yard-men who look after this line have been unable to close negotiations, and there is a dearth at present. Quotations: $21.50@$22.50.

Scrap.—The impossibility of getting scrap to any extent deprives that branch of the trade of interest. There is nothing new to note, but there would be if there were any scrap to be had.

Pittsburg. Sept. 7.

(From Our Special Correspondent.)

There is no great change in the iron and steel market, but raw material is still climbing higher. Producers are taking the wise course of holding out no inducements to buyers to contract for next year. It was reported to-day that a producer had sold his output of Bessemer pig iron at $23.60 for delivery the last four months of this year and the first six months of next year. This is the highest sale yet reported, and as the information comes from a reliable source it is believed to be authentic. It verifies the predictions made several weeks ago that September would see Bessemer pig selling at $25 in this market. Demand may be considerably less next year as compared with the current year, and yet keep mills in operation to their fullest capacity, because a considerable part of the business done for this year will hold over to the first two or three months of next year owing to the inability to make deliveries. Thus it will take two or three months of next year for most of the Bessemer furnaces to complete this year's contracts, so that this year's business has exceeded production by about 20%. A corresponding drop next year would only make production come out even at the end of the year. In all lines producers are well sold up, and many are behind in their deliveries. Bessemer steel billets are nominally quoted at $38.50@$45, although it is certain that for delivery during the next two months the lower of these figures could not be done. Slabs are scarcer than billets, and command fully $1 a ton more. Basic billets are booming. They have been selling around $45, but the asking price has been advanced to $50. It goes without saying that prices all through the first two or three quarters of next year will be not far from the present level, but it is impossible to predict with any show of conclusiveness whether they will be higher or lower than those now ruling in the present market scarcity.

The Bessemer Furnace Association has several inquiries, and will hold a meeting in Cleveland the latter part of this week or early next week to act upon them. It is likely that a price will be fixed for the sale of at least a limited quantity of iron for the first half or the whole of next year. What this price will be cannot be predicted, but it is not at all likely that it will be below the present ruling rates. No. 2 foundry iron has sold rather freely at $20, Pittsburg, for next year, while for delivery for the next two months a premium of not far from $2 a ton over this figure has been paid. In gray forge there has been a decided advance during the week, and it is now quoted at $19.50@$19.75. Pittsburg, while in the Valley it is not over 25c. a ton less.

Pig Iron.—There is but little if any Bessemer iron to be had for the balance of this year. A few thousand tons have been sold for next year at $22.75 and higher. The price quoted for

Pittsburg to-day is $23@$23.25. For prompt delivery a premium of $1 or $2 a ton can readily be secured. In foundry iron there has been no great change. No. 2 is quoted at $20.25@$20.75. Gray forge is $19.50@$19.75.

Steel.—Steel mills have been operating a little better during the past week than for some time past, and a little gain was made. The production, however, is still behind specifications, and mills have no steel to sell for this year. There is a difference of opinion on deliveries of billets for this year, quotations ranging from $38.50@$45 a ton. In sheet bars the market has been quiet.

Sheets.—The sheet market is firmer than last week. Producers are quoting 3.35c. and higher for No. 28 common, and it would be difficult to obtain a lower rate. No. 27 is held at 3.25c., and No. 14 is quoted at about 2.75c. There is no change in the price of galvanized sheets, the regular quotation being 70 and 5% off with a 15c. freight allowance.

Bars.—The demand keeps up, but there is no material change from last week's quotations.

New York. Sept. 8.

The pressure of consumers has forced higher prices for certain forms of iron and consumers are paying figures they did not expect a few weeks ago. In foreign trade we note some heavy shipments of machine tools to Germany; shipments of $85,000 worth of agricultural implements to Argentina; shipments of railroad material to Mexico and a recent shipment of $235,000 worth of locomotives and orders for $25,000 worth of machine tools for England.

Pig Iron.—There is practically no price for iron for immediate delivery. Anybody wanting it must dicker for each lot. Consumers have put prices still higher. We quote for Northern brands, tidewater delivery: No. 1 X foundry, $24; No. 2, $23; No. 2 plain, $22; Southern brands, New York delivery: No. 1 foundry, $23; No. 2 foundry, $22; No. 1 soft, $22.50; No. 2 soft, $22; No. 3, $20.75.

Warrant Irons are quoted: Alabama foundry No. 2, $16; No. 3, $14⅞@$15; No. 4, $14½; gray forge, $14½.

Bar Iron.—Prices are very firm. We quote refined iron 2.15c. in large lots on dock, and common, 2c.

Plates.—Prices have taken another advance, while the market is just as firm as it has been. We quote for large lots at tidewater: Tank, ¼-in. and heavier, 2.95c.; tank, 3/16-in., 3.05c.; shell, 3.05c.; flange, 3.10c.; marine, 3.20c.; firebox, 3.30c.; universals, 2.85c.

Steel Rails.—There is some inquiry. Prices are firm. Quotations are supposed to be about $33@$34 for standard sections f. o. b. Eastern mills. Smaller rails are nominally quoted: 12-lb., $38; 16-lb., $38; 20-lb., $37; 30-lb., $36; 40-lb. to standard, $34, with the usual advance for small orders.

Structural Material.—Quotations for all kinds of structural material are higher. We quote for large lots at tidewater: Beams, 15-in., 2.35c.; tees, 2.45c.; channels, 2.35c.; angles, 2.40c.

METAL MARKET.

NEW YORK, September 8. 1899.

Gold and Silver.

Gold and Silver Exports and Imports
At all United States ports in July and year.

	July.		Year.	
	1898.	1899.	1898.	1899.
GOLD.				
Exports	$1,497,013	$2,587,457	$7,723,205	$30,140,781
Imports	2,641,668	2,895,469	95,238,664	26,283,116
Excess	I. $1,144,655	I. $308,012	I. $87,515,459	E. $3,857,665
SILVER.				
Exports	4,884,922	4,003,432	29,452,919	31,123,380
Imports	2,653,746	2,731,796	15,546,785	17,168,511
Excess	E. $2,231,176	E. $1,271,636	E. $13,936,134	E. $13,954,869

This statement includes the exports and imports at all United States ports, the figures being furnished by the Treasury Department.

Gold and Silver Exports and Imports, New York
For the week ending September 7th, 1899, and for years from January 1st, 1899, 1898, 1897, 1896.

Period.	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	51,800	$421,047	$700,685	$190,618	E. $140,820
1899..	11,550,543	8,560,953	18,928,478	2,497,279	E. 19,420,789
1898..	2,738,048	75,435,102	23,547,087	2,226,873	I. 51,377,840
1897..	28,059,646	4,113,734	27,714,061	1,534,555	E. 50,125,418
1896..	40,379,248	37,072,025	27,299,633	1,939,481	E. 28,667,375

Gold exports were to the West Indies; silver chiefly to London. The gold imported was from various sources; the silver from the West Indies and South America.

The United States Assay Office in New York reports the total receipts of silver at 60,000 oz. for the week.

Prices of Foreign Coins.

	Bid.	Asked
Mexican dollars	$ .47½	$ .49
Peruvian soles and Chilean pesos	.42⅛	.44½
Victoria sovereigns	4.85	4.89
Twenty francs	3.85	3.90
Twenty marks	4.74	4.80
Spanish 25 pesetas	4.78	4.84

Average Prices of Silver per oz. Troy.

Month	1899.		1898.		1897.	
	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.
January	27.42	59.36	26.29	56.7	29.74	64.79
February	27.44	59.42	25.89	56.0	29.68	64.67
March	27.48	59.64	25.47	54.90	28.96	63.06
April	27.65	60.10	25.95	56.02	28.36	61.85
May	28.15	61.23	26.31	56.98	27.86	60.42
June	27.77	60.43	27.06	58.61	27.58	60.10
July	27.71	60.26	27.32	59.06	27.36	59.61
August	27.62	60.00	27.48	59.54	24.93	54.19
September	.....	.....	28.05	60.68	25.66	55.74
October	.....	.....	27.86	60.42	26.77	57.57
November	.....	.....	27.93	60.60	26.87	57.93
December	.....	.....	27.45	59.42	26.83	58.01
Year	.....	.....	26.76	58 26	27.55	59.79

The New York prices are per fine ounce; the London quotation is per standard ounce, 925 fine.

Average Prices of Metals per lb., New York.

Month.	COPPER.		TIN.		LEAD.		SPELTER.	
	1899.	1898.	1899.	1898.	1899.	1898.	1899.	1898.
Jan	14.75	10.99	22.48	13.87	4.18	3.65	5.34	3.96
Feb	18.00	11.28	24 20	14 08	4.49	3.71	6.28	4.04
March	17.54	11.98	23.82	14 38	4.37	3.72	6.31	4.25
April	18.43	12.14	24.98	14.60	4.31	3.63	6.67	4.26
May	18.25	12 00	25.76	14.52	4.44	3.64	6.88	4.27
June	17.93	11 89	25 85	15 22	4.43	3.82	5 98	4.77
July	18 33	11.63	29.63	15.60	4.52	3.95	5.82	4.66
August	18.50	11 89	31.53	16.23	4.57	4.00	5.65	4.58
Sept	.....	12.31	.....	16.03	.....	3.99	.....	4.67
October	.....	12.41	.....	17.42	.....	3.78	.....	4.98
Nov	.....	12.86	.....	18.20	.....	3.70	.....	5.29
Dec	.....	12.93	.....	18.30	.....	3.76	.....	5.10
Year	.....	12.03	.....	15 70	.....	3.78	.....	4.57

The price given in the table is for Lake Copper. The average price of electrolytic copper in January was 14.26c.; in February it was 17.02c.; in March, 16.35c.; in April, 17.13c.; in May, 17. 2c.; in June, 16.89c.; in July 17.099c; in August, 17. 42c.

Financial Notes of the Week.

The general business situation continues good. With the opening of September the comparative quiet of the holiday season is passing over, and greater activity is apparent. The crop reports are good, and there is every reason to anticipate a fall and winter of good business.

Money in New York demands good rates, but is still in better supply than abroad, rates in London and Berlin being so much higher than here that there has been no drawing upon balances abroad. In fact the tendency is the other way, and foreign borrowers are quite urgent in their demands. With the active condition of business here it is doubtful whether these requisitions can be met, and a renewal of gold imports in October is altogether possible.

The demand for currency from the interior continues good, and the issue of gold certificates has but partially met the demand. While the Western banks are generally in good position, they still find occasion to draw on New York. The banks are supplying all they can, but may be obliged to ship gold coin if it continues; and the result may be a more general circulation of coin than we have seen for a long time.

The 25th annual convention of the American Bankers' Association was called to order in the Auditorium of the Chamber of Commerce building, in Cleveland, O., September 5th, with probably the largest attendance in the history of the organization. Between 1,200 and 1,500 visiting bankers, representing all sections of the country, were present. The amount of capital represented by the delegates in round numbers is given at $5,700,000,000.

A small Continental order raised the price of silver from the lowest quotation of last week ¼d. When this was filled, the market reacted to 27 3/16d., closing to-day dull and weak.

The statement of the United States Treasury on Friday, September 7th, shows balances in excess of outstanding certificates as below, comparison being made with the statement for the corresponding date of last week:

	Sept. 1.	Sept. 7.		Changes.
Gold	$246,946,624	$249,855,014	I.	$2,908,090
Silver	4,793,703	4,019,586	D.	774,117
Legal tenders	17,408,452	16,750,734	D.	657,718
Treas. notes, etc.	771,260	796,676	I.	25,416
Totals	$269,920,339	$271,422,010	I.	$1,501,671

Treasury deposits with national banks amounted to $81,695,477, an increase of $361,522 during the week.

Imports and Exports of Metals.

Port.	Week, Sept. 6.		Year, 1899.	
	Expts.	Impts.	Expts.	Impts.
***New York.**				
Aluminum.....long tons	.....	.....	327	12
Antimony ore... " "	.....	‡25	.....	1,134
" regulus.. " "	.....	‡10	.....	715
Brass ..... " "	.....	.....	81	.....
Chrome ore..... " "	.....	‡50	.....	2,038
Copper, fine .. " "	174	435	37,838	18,512
" matte.. " "	.....	.....	556	768
" ore..... " "	.....	4,532	.....	26,436
" ash..... " "	.....	‡15	.....	181
" sulphate " "	.....	.....	11,413	.....
" other... " "	.....	.....	.....	90
Cop-nickel matte " "	.....	.....	.....	53
Ferro-mangan'se " "	.....	.....	15	178
Iron ore " "	.....	.....	.....	50
" pig, bar, rod " "	204	‡153	4,696	2,205
" pipe..... " "	263	.....	21,472	.....
" plates, sheets " "	.....	.....	712	15
" other.. ..... " "	.....	.....	1,144	.....
Lead..... " "	1,300	700	38,997	36,392
" ore..... " "	.....	.....	.....	941
Manganese, ore. " "	.....	‡197	.....	3,868
Metals, old scrap " "	260	‡321	3,194	2,689
Composition.. " "	360	.....	5,517	140
Nails..... " "	398	.....	13,757	.....
Nickel .. .. " "	70	‡10	1,342	748
" Ore ..... " "	.....	.....	.....	4,020
§Railr'd material " "	.....	.....	6,762	2,892
Rails, old..... " "	.....	.....	15,417	.....
Spiegeleisen..... " "	.....	.....	.....	362
Steel bars, plates " "	327	‡485	34,335	11,356
" rails..... " "	165	.....	12,990	155
" hoops..... " "	217	.....	831	.....
" wire..... " "	1,062	.....	25,698	950
" not speci'd. " "	54	‡60	24,287	9,947
Tin ..... " "	.....	205	.....	18,433
" dross or ashes " "	.....	.....	60	.....
" and black plates " "	.....	‡722	.....	23,161
Zinc..... " "	.....	.....	272	308
" dross..... " "	8	.....	403	.....
" ashes, skim " "	25	‡25	1,810	141
" ore..... " "	1,210	.....	5,474	.....
" oxide..... " "	84	.....	2,961	288
†Baltimore.				
Alumina .... bags	.....	.....	.....	3,479
Antimony regulus...casks	.....	.....	.....	286
Chrome Ore.....long tons	.....	.....	11	.....
Copper, fine..... " "	1,136	.....	25,251	.....
" matte... " "	.....	.....	.....	.....
" sulphate " "	20	.....	1,542	.....
" pipe.....	.....	.....	100	.....
Ferro-manganese " "	.....	.....	.....	1,737
Ferro-silicon..... " "	.....	.....	184	95
Iron pig, bar, etc. " "	207	7	1,189	5,639
" ore..... " "	.....	3,195	.....	171,275
" pyrites..... " "	.....	.....	.....	41,407
Manganese ore.. " "	.....	59	.....	32,261
Metals, scrap.... " "	.....	.....	4,604	14
Nails ..... " "	88	.....	636	.....
Pipe, iron & steel " "	.....	.....	7,761	.....
Spiegeleisen..... " "	.....	.....	.....	843
Steel, bars, pl'es.. " "	718	.....	30,154	.....
" wire ..... " "	.....	.....	861	.....
" rails..... " "	.....	.....	43,463	276
not specified.. " "	17	.....	2,266	10
Tin..... " "	.....	.....	563	.....
" dross..... " "	.....	.....	.....	.....
" and blackplates " "	.....	.....	.....	1,880
" other..... " "	.....	.....	43	.....
Zinc..... " "	.....	.....	25	5
" dross " "	.....	.....	212	.....
" skimmings.. " "	.....	.....	131	.....
***Philadelphia.**				
Antimony.. .....long tons	.....	.....	.....	10
Chrome ore..... " "	.....	.....	.....	1,770
Copper ore..... " "	.....	.....	.....	29,440
" old..... " "	.....	.....	.....	11
Ferro-manganese " "	.....	‡125	.....	1,442
Ferro-silicon..... " "	.....	.....	.....	160
Iron, pig..... " "	.....	.....	.....	1,375
" ore..... " "	.....	13,200	.....	155,801
" pyrites..... " "	.....	.....	.....	5,250
Manganese ore.. " "	.....	.....	.....	33,187
Steel sheets..... " "	.....	.....	.....	510
Spiegeleisen..... " "	.....	‡125	.....	1,895
Tin..... " "	.....	10	.....	820
" and black plates " "	.....	‡276	.....	2,918
Zinc dust ..... " "	.....	.....	.....	.....
" ore .. " "	.....	.....	3,093	.....

Total United States.§§

Articles.	June.		Jan.—June	
	Expts.	Impts.	Expts.	Impts.
Antimony.. .... long tons	....	88	...	616
" ore.... " "	.....	118	.....	832
Copper fine .. " "	6,044	3,990	47 274	11,925
" sulphate.. " "	1,367	.....	10,743	.....
Iron, pig & bar.. " "	16,725	4,045	149,263	19,716
" ore..... " "	2,228	43,762	3,709	212,902
" rails ..... " "	17	1	17	50
Iron & steel plates " "	4,595	398	33,180	935
" " wire " "	8,396	232	56,190	1,409
Steel, billets, rods, etc..... " "	1,736	1,178	53,532	12,109
Steel rails.. " "	19,506	379	113,069	523
Lead, pigs, bars & old ..... " "	4	.....	154	139
Lead in ore..... " "	7,083	6,018	40,050	45,090
Nails, cut..... " "	661	.....	1,137	.....
" wire ..... " "	3,713	.....	13,588	.....
Tin..... " "	105	1,423	216	17,107
" plates..... " "	4	4,602	170	25,702
Zinc ..... " "	43	49	540	546
" ore ..... " "	1,645	.....	10,275	.....

*New York Metal Exchange returns. †By our Special Correspondent. §Not specified. ‡Week ending Sept. 1st. §§ Monthly returns of the Treasury Department.

The duties on metals under the present tariff law are as follows: Antimony, metal or regulus, ¾c. a lb. Lead, 1½c. a lb. on lead in ores; 2½c. per lb. on pigs, bars etc; 2½c. on sheet, pipe and manufactured forms. Nickel, 6c. per lb. Quicksilver, 7c. per lb. Spelter or zinc, 1½c. per lb. in pigs and bars; 2c. on sheets, etc. Copper, tin and platinum are free of duty.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending September 1st, gives the following totals, comparison being made with the corresponding weeks in 1898 and 1897:

	1897.	1898.	1899.
Loans and discounts	$569,291,200	$672,173,900	$753,663,000
Deposits	641,759,400	752,389,800	849,793,800
Circulation	13,954,700	14,048,500	14,300,800
Reserve:			
Specie	92,423,400	148,378,300	168,093,900
Legal tenders	102 130,600	54,710,200	53,545,800
Total reserve	$194,554,000	$203,088,500	$221,639,700
Legal requirements	160,430,850	188,097,450	212,448,450
Balance, surplus	$34,114,150	$14,991,050	$9,191,250

Changes for the week, this year, were an increase of $228,400 in circulation; decreases of $3,126,900 in loans and discounts, $8,341,300 in deposits, $4,287,200 in specie, $985,400 in legal tenders, and $3,187,275 in surplus reserve.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings at the corresponding dates last year.

Banks.	1898. Gold.	1898. Silver.	1899. Gold.	1899. Silver.
N.Y. Ass'd.	$148,378,300	.....	$168,093,900	.....
England	175,016,090	.....	178,667,730	.....
France	376,839,470	$249.301,395	385,383,060	$239,496,525
Germany	141,760,000	73,025,000	141,870,000	73,085,000
Spain	52,570,000	27,415,000	64,800,000	68,460,000
Aus.-Hun	174.990.000	63,120,000	183,595,000	63,615,000
Neth'l'ds	21,545,000	34,385,000	13,710,000	30,195,000
Belgium	14,265,000	7,135,000	14,470,000	7,235,000
Italy	74,790,000	10,470,000	77,645,000	6,970,000
Russia	547,475,000	21,880,000	471,720,000	27,275,000

The returns of the Associated Banks of New York are of date of September 1st, and the others are of date of August 31st, as reported by the "Commercial and Financial Chronicle" cable. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reports gold only.

Shipments of silver from London to the East for the year up to August 24th, 1899, are reported by Messrs. Pixley & Abell's circular as follows:

	1898.	1899.	Changes.
India	£3,331,290	£3,302,100	D. £29.190
China	384,834	869,453	I. 484,619
The Straits	263,937	113,946	D. 149,991
Totals	£3,980,061	£4,285,499	I. £305,438

Imports for the week, this year, were £145,000 from New York, £23,000 from the West Indies, and £20,000 from Chile; all bar silver. Shipments were £27,500 in bar silver to Bombay.

The Treasury Department's estimate of money in the United States on September 1st is as follows:

	In Circulation.	In Treasury.	Totals.
Gold coin	$672,933,192	$189,986,760	$862,919,952
Silver dollars	64,887,236	416,364,995	481,252,231
Subsid. silver	72,516,837	4,130,192	76,647,029
Gold certificates	68,688,989	13,529,430	82,218,419
Silver certificates	403,632,345	3,646,159	407,278,504
Treas'y notes, 1890	91,650,632	865,648	92,516,280
U. S. notes	310,130,421	36,550,595	346,681,016
Cur'y certificates	19,170,000	260,000	19,430,000
Nat. bank notes	238,521,489	3,632,408	242,153,897
Totals	$1,942,131,141	$668,966,187	$2,611,097,328

The total circulation shows an increase of $11,013,937 in August; and of $150,034,596, as compared with September 1st, 1898. The circulation per capita is $25.41, as estimated.

The coinage executed at the mints of the United States in August and the two months of the fiscal year, is reported by the Bureau of the Mint, as below:

	August. Pieces.	August. Value.	Eight Months. Pieces.	Eight Months. Value.
Double eagles	286,000	$5,720,000	380,000	$7,600,000
Eagles	418,310	4,183,100	828,460	8,284,600
Half eagles	70,000	350,000	70,000	350,000
Quarter eagles	.....	.....	.....	.....
Total gold	774,310	$10,253,100	1,278,460	$16,284,600
Dollars	836,000	$830,000	1,236,000	$1,236,000
Half dollars	1,303,272	651,636	1,709,272	859,636
Quarter dol	2,228,000	557,000	2,696,000	674,000
Dimes	1,950,000	195,000	2,630,000	263,000
Total silver	6,311,272	$2,233,636	8,271,272	$3,032,636
Five c. nickels	2,644,000	$132,200	4,324,000	$216,200
One c. bronze	2,272,000	22,720	2,810,000	28,100
Total minor	4,916,000	$154,920	7,134,000	$244,300
Total coinage	12,001,582	$12,641,656	16,683,732	$19,506,536

The August coinage was $5,776,776 greater than July, made up of gold coin principally.

Indian exchange continues in demand and the applications for Council bills in London largely exceeded the amount offered. The price continues unchanged, the average rate being 15.97d. per rupee.

Other Metals.

Daily Prices of Metals in New York.

Sept.	Sterling Exchange.	Silver. Fine oz. Cts.	Silver. London, P'nce	Copper. Lake, cts. ℔ lb.	Copper. Electrolytic, ℔ lb.	Copper. Lond'n standard £ ℔ ton.	Tin, cts. ℔ lb.	Lead, cts. ℔ lb.	Spelter, cts. ℔ lb.
2	4.86	59¼	27 5/16	18½	17.45	... .	31½	4.57½	5.37½
4	.....	.....	27⅜	.....	.....	77 0 0	.....	.....	.....
5	4.86¼	59⅝	27⅜	18½	17.45	77 0 0	31¾	4.57½	5.50
6	4.86¼	59 15/16	27 7/16	18½	17.45	77 0 0	32	4.57½	5.55
7	4.86¼	59	27 7/16	18½	17.45	76 17 6	32¼	4.57½	5.55
8	4.86¼	59	27 7/16	18½	17.45	76 12 6	32¼	4.57½	5.60

The quotations given for electrolytic copper are for cakes, ingots and wirebars; the price of electrolytic cathodes is usually 0.25c. lower than these figures.

Copper.—The market again developed considerable strength. While orders from home manufacturers are not very plentiful at the moment, we learn, on the other hand, that European consumers have been buying rather freely of late, even for forward delivery. Production, though steady, does not seem to show any increase worth speaking of, and under the circumstances present values are expected to be maintained for some time. Lake copper is still held at 18½c.; quotations for electrolytic copper, in cakes, ingots or wirebars range from 17.40@17.60c., cathodes 17.15@17.35c.; casting copper neglected at 17⅜@17½c.

The London market for standard copper has ruled firm throughout the week, being supported by strong buying orders. The opening quotation on Monday was £77 for spot, and remained at this point throughout the week, without any material change. The closing quotations are cabled as £76 12s. 6d.@£76 15s. for spot and 5s. higher for three months.

Refined and manufactured sorts we quote: English tough, £79 15s.@£80 5s.; best selected, £81@£81 5s.; strong sheets, £87 10s.@£88; India sheets, £83 10s.@£84; yellow metal, 6⅞@7d.

Tin.—The hardening tendency noticed the end of last week has made further progress, and we have again to report an advancing market. Prices on Monday came about £1 higher than on the preceding Friday, and on Thursday of this week the market advanced another pound. The closing quotations are cabled as £144 2s. 6d.@£144 5s. for spot and 17s. 6d. lower for three months.

The special feature is the backwardation in three months' tin, which reflects the scarcity of prompt metal. In our market here the same state of affairs exists, spot tin being quoted at 32¼c., futures at 31¾c. Demand throughout the week was excellent.

Visible stocks of tin on September 1st are reported as below, in long tons of 2,240 lbs.:

	Store.	Afloat.	Totals.
London	4,596	2,388	6,984
Holland	3,222	1,317	4,539
U. S. exc. Pacific ports	2,298	3,925	6,223
Totals	10,116	7,630	17,746

The total shows a decrease of 1,255 tons as compared with August 1st; and of 6,266 tons, or 26.1%, as compared with September 1st, 1898. Deliveries for consumption during August are estimated at 5,148 tons.

Lead is ruling quiet, but steady. There is no change in prices, New York delivery being quoted at 4.55@4.60c.; St. Louis delivery at 4.50@4.55c.

It is reported from St. Louis that there is some trouble over the eight-hour law passed in the State of Missouri last winter, which applies to mines 200 ft. deep or more, and which became operative on August 31st. The opinion generally expressed is to the effect that this law is probably unconstitutional. It is rather difficult to obtain information as to what effect it will have on the production.

From reports received during the week regarding the foreign market, it looks as if both refined lead and ore would be rather scarce. The quotations are cabled as £15 5s.@£15 7s. 6d. for Spanish lead, £15 7s. 6d.@£15 8s. 9d. for English lead.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead is strong, but very quiet, common selling in a retail way at 4.50c. per lb., and corroding and chemical lead at 4.55c.

Spelter.—The tendency of the market is still rather undecided, although the lower values established have attracted the attention of consumers to quite a considerable extent. In some quarters a heavy production of ore is expected, owing to the remunerative prices. On the other hand, the consumption of spelter continues to be very satisfactory indeed. The ruling quotations are 5.35@5.40c. St. Louis; 5.55@5.60c. New York.

From Europe a somewhat better demand and more business is reported and the closing quotations are cabled as £23 15s.@£23 17s. 6d. for good ordinary brands; £23 17s. 6d.@£24 for special brands.

Antimony.—During the week quite a good demand was encountered, but prices all around are somewhat lower, 10½@10¾c. for Cookson's; 9⅝@9¾c. for Hallett's; 9½@9⅝c. for Hungarian and U. S. Star.

Nickel continues on unchanged lines, and no alteration in prices can be reported. We quote for ton lots, 33@36c. per lb., and for smaller orders, 35½@38c. London prices are 14@16d. per lb., according to size of order.

Platinum.—Demand is active and prices continue high. For large lots $15.50 per ounce is now quoted in New York; for smaller orders, $16@$17. The London quotation is 62@64s. an ounce.

Quicksilver.—The wholesale price in New York is unchanged at $47 per flask. The London price is also unchanged at £8 12s. 6d. per flask, with the same rate quoted from second hands.

The Minor Metals.—Quotations are given below for New York delivery:

Aluminum.	Per lb.		Per lb.
No. 1, 99% ingots	35@37c.	Bismuth	$1.45@$1.50
No. 2, 90% ingots	31@34c.	Magnesium	$2.75@$3
Rolled sheets	38c. up	Phosphorus	40@50c.
Alum.-bronze	20@23c.	Tungsten	70c.
Nickel-alum	33@39c.	Ferro-tungsten, 60%	60c.

Variations in price depend chiefly on the size of the order.

LATE NEWS.

The annual convention of the American Bankers' Association, in Cleveland, O., closed September 7th. The election of officers for the ensuing year resulted as follows: President, Walker Hill, St. Louis; vice-president, Alvah Trowbridge, New York; members of Executive Council, Myron T. Herrick, Cleveland; Stuart G. Nelson, New York; J. D. Powers, Kentucky; Daniel Annon, Maryland; T. E. Stevens, Nebraska; C. T. Lindsey, Virginia; Geo. F. Orde, Chicago; Caldwell Hardy, Norfolk, Va.; J. W. Whiting, Mobile, Ala.; J. H. Ingerwollen, Clinton, Ia. One vice-president from each State was also elected. Immediately after the adjournment the Executive Council held a meeting. M. T. Herrick, of Cleveland, was chosen chairman; J. R. Branch, of New York, was re-elected secretary, and George M. Reynolds, of Chicago, was re-elected treasurer. The council will meet again in the spring at the call of the chairman and select the time and place of the next annual convention. It is generally believed that Richmond is the city which will be chosen.

The proposed consolidation of several bridge manufacturing concerns is assuming shape. The present intention is to capitalize the company at $50,000,000, of which $20,000,000 will be preferred and $30,000,000 in common stock. The name will probably be the American Bridge Company, or the Republic Bridge Company. It is understood that the following concerns have either given options or signified their sympathy with the consolidation: Post & McCord, of New York; Berlin Iron Bridge Company, of East Berlin, Conn.; Groton Bridge & Manufacturing Company, Groton, N. Y.; Elmira Bridge Company, Elmira, N. Y.; Union Bridge Works, Athens, Pa.; Pittsburg Bridge Company, Pittsburg, Pa.; Riter-Conley Manufacturing Company, Pittsburg; Pencoyd Iron Works, Pencoyd, Pa.; the Bridge Department of the Pennsylvania Steel Company; the Phoenix Bridge Company, Phoenixville, Pa.; Penn Bridge Company, Beaver Falls, Pa.; Fort Pitt Bridge Works, Washington, Pa.; Edgemoor Bridge Works, Edgemoor, Del.; Youngstown Bridge Company, Youngstown, O.; King Bridge Company, Cleveland, O.; New Columbus Bridge Works, Columbus, O.; Wrought Iron Bridge Company, Canton, O.; Massillon Bridge Company, Massillon, O.; Detroit Bridge Works, Detroit, Mich.; Chicago Bridge Works, Chicago; American Bridge Works, Chicago; Missouri Valley Bridge & Iron Works, A. J. Tullock, proprietor, Leavenworth, Kan.

This list includes nearly all the leading bridge companies of the country except the Shiffler Bridge Company and the Keystone Bridge Company of Pittsburg. The Keystone Company is a Carnegie concern. W. H. McCord, of Post & McCord, of New York City, with Charles M. Jarvis, of the Berlin Iron Bridge Company, have been among the most active advocates of the consolidation; and Mr. McCord is mentioned as the probable president of the new company. The presidency, it is said, was offered Percival Roberts, Jr., of the Pencoyd Iron Works, but declined.

(From Our Special Correspondent.)

The Mexican Lead Company, recently organized in New York with a capital of $7,000,000, was formed for the purpose of acquiring properties near Monterey, Mexico; the mines purchased include La Crisolita Company's property, also the San Pedro Mine, which is one of the oldest lead mines in Mexico. The company also purchased the Monterey & Mineral Belt Railroad. The deal was carried through by A. B. Turner and C. C. Burger, the latter formerly of Colorado, and the Geo. D. Cook Company of Chicago, which retains an interest in the company.

MINING STOCKS.

Complete quotations will be found on pages 326, 327 and 328 of mining stocks listed and dealt in at:

Baltimore,	Philadelphia,	Mexico.
Boston.	Spokane.	Paris.
Colo. Springs.	Salt Lake.	Rossland.
Denver.	San Francisco.	Toronto.
New York.	London.	Valparaiso.

New York. Sept. 8.

Speculation in mining shares has been quiet, and prices, especially for the higher class securities, have receded. Amalgamated Copper lost 50c. at the opening, selling at $96, and after rising to $97.50, closes at 25c. less than last week, with limited trading. Anaconda fluctuated between $55½@$56¾, showing a loss of 50c.@$1.25 from last week. Tennessee Copper has ruled steady at $19.25@$20.50 on small dealings. British Columbia Copper was lower at $11@$11.50, while transactions were limited on the curb. American Smelting and Refining shares hold well at $42⅜@$43⅜ for the common, and $90.75@$91.50 for the preferred; sales were fairly large.

The Colorado stocks are favored by increased shipments from the mines, especially in Cripple Creek, where the August output is valued at $1,300,000, making the total for the year over $10,500,000. Several new shippers have come forward and the selling price of these shares has advanced greatly. In the list of old shippers, Elkton Consolidated was strong on the resumption of dividends. This company has declared 3c. per share, payable this month, which is 1½c. more per share than in November, 1898, when the last dividend was paid. At that time the stock was quoted at 97@98c., while to-day it is selling for $1.10. Portland has also declared a regular $60,000 monthly dividend and it is reported an extra dividend of 10c. ($300,000) is to be announced at the next meeting. The stock finds support around $2.50. Isabella sold up to 95c., an advance of 2c. from the highest price last week. Breece was firmer at $1.75@$1.90, and Small Hopes was quoted at $1.25@$1.30.

A better tone prevailed in the Californias. Standard Consolidated sold at $2.75, and Brunswick Consolidated gained at 20@24c. Deadwood Terra of South Dakota sold 5c. off at 80c., and Horn Silver, of Utah, changed hands at $1.35.

The National Lead Company has declared a quarterly dividend of 1¾% on the preferred stock, payable September 15th.

Last week the New York Stock Exchange listed $40,000,000 preferred and $50,000,000 common stock of the American Steel and Wire Company. An official statement has been filed at the Exchange showing that the company's entire capital stock has been issued. The plants in this combination are located in 12 different States. Only five of the plants are controlled by stock ownership, the others being owned in fee.

Auction sales include 40 shares preferred stock of the Jefferson & Clearfield Coal and Iron Company at $70¼.

Boston. Sept. 7.

(From Our Special Correspondent.)

The mining stock market is beginning to show the end of the holiday season in a greater activity. Coppers are in more demand, though the call was rather uneven. Still the market has been rather a broader one this week than we have had for some weeks past.

The declaration of a $20 dividend by the Calumet & Hecla was generally expected. This makes $40 paid since the company's fiscal year began, and $80 since January 1st.

Calumet & Hecla sold at $840; Boston & Montana, $350; Quincy, $160; Osceola, $88. In Anaconda some business was done at $56, while Amalgamated Copper closed at $96½ bid. In the smaller stocks there was moderate activity, and prices were generally well maintained.

New England Gas and Coke sold at $33. Dominion Coal common was quoted at $54@$55. The Dominion Company reports shipments of 220,000 tons of coal from its Cape Breton mines in August, and for the half year from March 1st to August 31st a total of 835,000 tons; showing an increase of 160,470 tons, or 23.6%, over last year.

Industrious advertising of some very doubtful flotations continues in the Boston papers. It is probable that these people get some returns, or they would not continue to pay for the advertisements. One wonders, however, who can be taken in by some of the stuff offered.

Salt Lake City, Sept. 2.

(From Our Special Correspondent.)

September opens on a feverish mining share market, with more indications of weakness than strength among speculatives. Perhaps the chief cause for this upset is the Grand Central-Mammoth antagonism, which has affected anew the shares of each, besides influencing the general list. Speculators are wary and have about concluded that when positive affirmations are given out by certain companies and manipulators the opposite is nearer the truth.

Ajax has softened, though excellent reports continue to come from the mines. Anchor is lower. Bullion-Beck is off a few points. On August 31st an authoritative statement was given out that all Centennial-Eureka shareholders may part with their holdings at $70 per share, on which 10% will be paid when the stock is placed in escrow. It is believed the Bostonians will complete the purchase and assume control within 60 days. Chloride Point recovered a trifle, closing stronger than early in the week. All Daly offerings at receding figures were quickly taken. Daly-West is moving up in anticipation of an October dividend. Daisy remains an active trader, selling up to 29½ in the middle of the week, then softening. At 25 there seems to be strong inside support.

Four Aces did business up to 30, dropping off on the close. Geyser-Marion spurted above 50, on reports of a favorable ore uncovering in virgin ground. Grand Central broke, selling this morning at $7.02, the low mark in the present slump. Lower Mammoth did considerable business around 30. Mammoth has again sagged below $2. Sacramento paid the $5,000 dividend yesterday. South Swansea will pay the bimonthly $7,500 dividend on the 5th. Swansea has declared the regular $5,000 dividend, payable September 9th.

San Francisco. Sept. 2.

(From Our Special Correspondent.)

Business continues to be entirely among insiders and on a very moderate scale. There have been the usual fluctuations, generally in an upward direction. The reports from the Comstock continue uninteresting.

Some quotations noted are: Consolidated California & Virginia, $1.85@$1.90; Ophir, $1.10@$1.15; Sierra Nevada, 74c.; Gould & Curry, 63c.

The sales of mining stocks on regular call at the San Francisco Stock Exchange for the year to date compare as follows:

	1898.	1899.
January shares	157,360	121,955
February	151,055	350,800
March	166,260	272,625
April	203,355	209,215
May	119,535	164,580
June	120,780	201,375
July	55,900	147,340
August	105,030	153,305
Total	1,079,285	1,621,255

The total this year shows a considerable gain over the very low figures of 1898, but it is still only a very moderate business.

The contract with the new company which is to furnish electric power to the Comstock mines has been signed by 16 out of the 27 companies concerned. The companies that have thus acted are the Utah Consolidated, Sierra Nevada, Union Consolidated, Mexican, Ophir, Consolidated California & Virginia, Best & Belcher, Gould & Curry, Savage, Chollar, Potosi, Bullion, Alpha Consolidated, Segregated Belcher & Mides Consolidated, Justice and Occidental Consolidated. The remaining eleven companies are expected to authorize the signing of the contract within the next few days, or soon as their directors can meet for the purpose. These companies include the Hale & Norcross, Consolidated Imperial, Challenge Consolidated, Confidence, Yellow Jacket, Crown Point, Belcher, Overman, Caledonia and Alta. Another outside concern is thus fastened on the companies, ready to absorb any profit they may make should new sources of production be found.

London. Aug. 29.

(From Our Special Correspondent.)

Although we are just at the height of the summer holiday time, the mining stock market shows considerable activity, but business is practically confined to the West Australian section. The shares in the leading Kalgoorlie mines are still largely in demand and the professional element are booming them for all they are worth. Lake Views, Horseshoes, Ivanhoes are the leaders, but almost all their neighbors are enjoying a fine time of it. The mines and prospects of the Givalia group are also busy and I hear that several adjoining properties are to be floated on the strength of the success of the Sons of Givalia Mine. Owing to the many rises in these shares, which are largely held by Whitaker Wright's promoting companies, the shares in the latter are in considerable demand. Altogether the Whitaker Wright group are in pretty fair prosperity as far as the market goes. On the other hand, Mr. Bottomley seems to be getting on very badly, and is doing practically nothing. A short time ago he amalgamated two of his promoting companies and now he proposes to amalgamate the resulting one with his Westralian Market Trust. In his circular he naively states that the two companies are engaged in practically the same business (a discovery which everybody else made long ago), and that there is no particular reason why there should be two companies. I suppose the real reason for the present amalgamation is that no business of any kind is being done, and it is expensive to keep the two sets of directors and staffs.

The South African section continues to be absolutely stagnant. The political prospect gets worse and worse, and it looks as if there was to be war. To what extent the gold and diamond industries will suffer if such should be the case not even the wisest of prophets can say, so it is no wonder that the South African market is left alone.

In 1896 I gave you an account of the promotion of a company called the Antimony Gold and Complex Ores Extraction Company, Limited. This company was formed by a Mr. Wills and Mr. James Woolford for the purpose of acquiring and working a patent belonging to the latter for treating antimonial gold ores. Very meagre information was given about the process, and no independent expert had examined it. The capital was £350,000, of which £270,000 in shares and £30,000 in cash was purchase price. The public were offered 80,000 shares at a premium of 50%. It was the height of impudence to ask such a purchase price and to offer shares at a premium, for a metallurgical process that was untried and of doubtful value. It is no wonder therefore to find now that the whole thing has been an absurd fiasco. As a matter of fact, nobody responded to the offer of shares at a premium, so the directors had to fish round for victims privately and offer some of their own vendor's shares as bait. Eventually some £22,000 was obtained in this way, and as the vendors waived their cash consideration the whole of this money was available as working capital. So off went the directors and built an extensive plant at a cost of £26,000, and then had to raise further capital by means of debentures to pay for it. No actual metallurgical operations were ever conducted, chiefly from lack of capital. But to keep up the spirits of the shareholders, Mr. Wills and Mr. Woolford extended their claims for the value of the process by including all complex ores within the scope of its usefulness. The crisis came at last by creditors petitioning the other day for a compulsory winding up of the company and investigation of its operations, but the directors and leading shareholders begged for a chance to reconstruct the company and introduce fresh capital. My own advice would be if they could raise another £500 to engage a first class practical metallurgist to examine the works, try the process and give an independent report. That, however, is just the very last thing they would be willing to do. One of their previous experts on whom they relied to help them to raise money unfortunately got into prison for some irregularities in his financial operations, so he is not at present available. I should also like to know how many of their own shares Mr. Wills and his colleagues sold privately for cash. I believe the number was not inconsiderable.

Paris. Aug. 27.

(From Our Special Correspondent.)

The stock market has been sufficiently agitated, though mining stocks have been the most tranquil section of the Bourse.

The South African gold shares, which showed so many signs of activity a few weeks ago, are now very quiet indeed. No one will take the risk of dealings in them while the present uncertainty in the Transvaal continues. I do not look for war with Great Britain, but I do expect a long period of diplomatic uncertainty.

The copper stocks have been weaker in some cases, though in others they have not lost ground. The chief reaction has been in Rio Tintos, which are apparently without support. It is said here that the London speculation in copper is over, and that we may look for a fall. A speculation in Rio Tinto was intimately connected with that in the metal, and the close of the two has come together. It is quite possible, and yet I do not look for any considerable fall. The high price of copper is based on present demand, though a speculative movement has certainly carried the price higher than the natural causes might have put it.

The foreign merchandise trade of France for the seven months ending July 31st is reported by the Ministry of Commerce as below:

	1898. Francs.	1899. Francs.
Imports	2,765,920,000	2,508,229,000
Exports	1,953,553,000	2,209,976,000
Excess in imports..	812,367,000	298,253,000

The decrease in imports—257,691,000fr., or 10.3%—was entirely in food, receipts of raw materials showing an increase. The increase—256,423,000fr., or 11.6%—in exports was partly in manufactures and partly in raw materials. The net result was a decrease of 514,114,000fr., or 63.3%, in excess of imports over exports.

The corrected reports of the Ministry of Commerce show that in the half year ending June 30th there was imported into France 5,009,910 metric tons of coal—chiefly from England and Belgium. This is an increase of 1,088,260 tons, or 27.8%, over last year. The exports—principally to Switzerland and Italy—were 614,710 tons, a decrease of 39,760 tons, or 6.2%. This shows that France consumed during the half year approximately 4,395,200 tons more coal than was produced in the country.

We are still looking with anxiety toward the trial at Rennes, which is disturbing the minds of Paris so profoundly. The business drags terribly, and we can only hope for a decision which will finally close the episode, which has discredited so many, and has so deeply agitated all our politics.

all our politics.

Azote.

STOCK QUOTATIONS.

NEW YORK.

NAME OF COMPANY.	Location.	Par val.	Sept. 1. H.	Sept. 1. L.	Sept. 2. H.	Sept. 2. L.	*Sept 4. H.	*Sept 4. L.	Sept. 5. H.	Sept. 5. L.	Sept 6. H.	Sept 6. L.	Sept. 7. H.	Sept. 7. L.	Sales
Adams Con	Colo.	$10	.08	....	.08	....	....	....	.08	....	.08	....	.11	.10¾	4,000
Alamo	"	1	.09	....	.09	....	....	....	.10	....	.10	....	....	....	225
Alice	Mont.	5	.80	....	.80	....	....	....	.80	....	.80	....	....	....	100
Alta	Nev.	3	....	....	....	....	....	....	....	....	....	....	....	....	....
Amalgamated C	Mont.	100	97.50	96.00	97.00	96.00	....	....	97.50	96.75	97.50	96.75	97.00	96.50	1,125
Anaconda, c	Mont.	25	56.13	56.00	56.00	....	....	....	56.75	56.00	56.00	55.50	55.50	....	13,300
Anaconda Gold	Colo..	5	.50	....	.47	....	....	....	.45	....	56¼	....	.52	.49	400
AnchoriaLel	"	1	.72	....	.71	....	....	....	.71¾	....	.72	....	....	....	....
Andes	Nev.	3	....	....	....	....	....	....	....	....	....	....	....	....	....
Argentum-Jun	Colo	2	.27	....	.27	....	....	....	.27	....	.30	....	....	....	990
Belcher	Nev.	3	.30	....	.30	....	....	....	.32	....	.54	....	....	....	552
Best & Belcher	"	3	.60	....	.60	....	....	....	.60	....	.61	....	....	....	800
Breece	Colo.	5	1.75	....	1.75	....	....	....	1.90	....	1.75	....	....	....	....
Brit.Col.Copper	B. C.	10	11.25	11.00	11.75	11.38	....	....	11.50	11.25	11.50	11.25	11.50	11.00	470
Brunswick	Cal.	1	.24	.22	.24	....	....	....	.20	....	.24	.22	....	....	1,900
Caledonia	S.Dak	....	.50	....	.50	....	....	....	.50	....	.50	....	....	....	....
Catalpa	Colo..	10	.20	....	.20	....	....	....	.20	....	.20	....	....	....	100
Chollar	"	3	.30	....	.30	....	....	....	.35	....	.30	....	....	....	420
Comst'k T., st'k	"	100	12	....	.04	....	....	....	.04	....	.04	....	....	....	42
do. bonds	"	100	.01	....	.01	....	....	....	.04	....	.04	....	....	....	850
Con. Cal. & Va.	"	2½	2.05	....	1.75	....	....	....	2.00	....	1.80	....	....	....	500
Con. Imp.	"	....	....	....	....	....	....	....	....	....	.02	....	....	....	100
Croesus	Colo..	1	....	....	.01	....	....	....	....	....	.03	.02	....	....	3,000
Cr & Cr. Creek	"	1	.09	....	.10	....	....	....	.09	....	.10	....	....	....	1,500
Crescent	"	10	.15	....	.15	....	....	....	....	....	.15	....	....	....	....
Cripple Cr. Con.	"	1	.14	....	.14	....	....	....	.15	.14	.17	....	.20	.18	3,000
Crown Point	Nev.	3	.20	....	.20	....	....	....	.2	....	.20	....	....	....	....
Deadw'd Terra	S.Dak	25	.65	....	.65	....	....	....	.55	....	.60	....	.80	....	....
Dunkin	Colo..	1	.07	....	.07	....	....	....	.10	....	....	....	....	....	....
Elkton	"	1	1.05	....	1.10	....	....	....	1.11	....	1.10	....	1.30	1.25	1,600
Eureka	Nev..	20	.40	....	.35	....	....	....	.40	....	.40	....	....	....	....
Father de Smet	Dak..	100	.10	....	.10	....	....	....	.10	....	.10	....	....	....	500
Garf Con.	Colo..	1	.16	....	.15	....	....	....	.15	....	.15	....	.17	.15	3,000
Gilpin & Linc'n	"	1	....	....	....	....	....	....	....	....	....	....	....	....	....
Gould Coin C.Ck	"	1	2.05	....	2.05	....	....	....	2.10	....	2.20	....	2.30	2.25	....
Gold Coin Gilp	"	5	....	....	....	....	....	....	....	....	....	....	....	....	....
Golden Fleece	"	1	.25	....	.24	....	....	....	.23	....	.30	....	.25	....	....
Gould & Curry	Nev..	8	.30	....	.30	....	....	....	.30	....	.25	....	....	....	....
Hale&Norcross	Nev	8	.30	....	.31	....	....	....	.3	....	.30	....	....	....	800
Homestake	S.Dak	100	65.00	....	65.00	....	....	....	65.00	....	75.00	....	....	....	100
Horn Silver	Utah..	25	1.35	....	1.25	....	....	....	1.30	....	1.10	....	....	....	....
Iron Silver	Colo.	20	.50	....	.50	....	....	....	.50	....	.50	....	....	....	255
Isabella	"	1	.90	....	.90	....	....	....	.80	....	.91	....	.95	.90	635
Jack Pot	"	1	....	....	.70	....	....	....	.72	....	....	....	....	....	682
Jefferson	"	1	07¾	....	....	....	....	....	.08	....	.08	....	.10	.08	1,000
Justine	"	1	....	....	....	....	....	....	....	....	....	....	....	....	870
King & Pemb	Ont..	10	.8	....	....	....	....	....	.15	....	.18	....	....	....	365
Lacrosse	Colo..	10	16	....	.14	....	....	....	.6	....	.16	....	....	....	3,200
Leadville Con	"	10	.10	....	.10	....	....	....	.11	....	.09	....	....	....	500
Little Chief	"	50	.19	....	.19	....	....	....	.12	....	.19	....	....	....	100
Mexican	Nev..	8	55	....	48	....	....	....	.6	....	52	....	....	....	700
Mollie Gibson	Colo	5	.27	....	.24	....	....	....	.2	....	24	....	3	.26	500
Morenci Cop.pf	"	1	1.80	....	1.85	....	....	....	1.80	....	1.70	....	1.80	1.75	750
Moulton	Mont.	25	.50	....	.45	....	....	....	.25	....	.31	....	....	....	50
Mt. Rosa	Colo..	1	.32	....	.34	....	....	....	.35	....	.35	....	.40	.35	200
Occidental	Nev.	8	.19	....	.14	....	....	....	.15	....	.16	....	....	....	....
Ontario	Utah	100	8.25	....	7.50	....	....	....	7.00	....	7.25	....	....	....	150
Ophir	Nev	8	1.05	....	1.05	....	....	....	1.05	....	1.00	....	....	....	90
Pharmacist	Colo	1	.05	....	.03	....	....	....	.03	....	.05	....	....	....	500
Phoenix	Aris..	1	.11	....	.09	....	....	....	.09	....	.10	....	....	....	100
Plymouth Con	Cal..	10	.30	....	.30	....	....	....	.28	....	.18	....	....	....	....
Portland	Colo..	1	2.30	....	2.25	....	....	....	2.20	....	2.40	....	2.50	2.40	100
Potosi	Nev..	8	.30	....	.32	....	....	....	.3	....	.37	....	....	....	500
Quicksilver	Cal..	100	2.00	....	2.0	....	....	....	2.0	....	2.0	....	....	....	....
do. pref	"	100	8.00	....	8.00	....	....	....	7.50	....	7.50	....	....	....	....
Savage	Nev..	2½	.15	....	.15	....	....	....	.15	....	.22	....	....	....	....
Sierra Nevada	"	8	.70	....	.90	....	....	....	.90	....	.78	....	....	....	400
Small Hopes	Colo.	20	1.45	....	1.50	....	....	....	1.25	....	1.25	....	....	....	100
Specimen	"	1	.09	....	.10	....	....	....	.09	....	.10	....	....	....	....
Standard Con	Cal..	1	2.75	....	2.75	....	....	....	2.70	....	2.75	....	2.75	....	1,060
Syndicate	"	10	....	....	....	....	....	....	....	....	....	....	....	....	....
Tenn Copper	Tenn	25	20.25	19.75	20.50	19.75	....	....	20.00	19.25	19.75	19.25	....	....	....
Union	Colo..	1	.32	....	.32	....	....	....	.33	....	.34½	....	.36	.34	400
Union Con	Nev..	2½	.20	....	.20	....	....	....	....	....	.34	....	....	....	100
Utah Con	"	5	.06	....	.05	....	....	....	.07	....	.14	....	....	....	....
Work	Colo.	1	.31	....	.3	....	....	....	.30	....	.34	....	.3	.34	1,000
Yellow Jacket	Nev..	5	.27	....	.27	....	....	....	.27	....	.28	....	....	....	....

COAL AND INDUSTRIAL STOCKS.

Am. Sm. & Ref.	.....	$100	42¾	42¼	....	....	....	....	43¾	42¾	43	41¾	41	....	5,175
" " " pf	.....	100	91	90¾	91	122¼	....	....	91½	9¼	92	91¼	91	....	3,640
Am.S &W Co n	.....	100	5¾	56¼	57¼	56½	....	....	57¾	56½	58¼	57¾	57¼	....	16,545
" pf r n	.....	100	99¼	99	99¼	98	....	....	99¼	98¾	99	....	98¾	....	1,422
Central of N. J.	N. J	100	119¾	1.8¾	119¾	119	....	....	120¾	119¼	12 ¾	120	118½	....	8,27
Col. C. & I. Dev	Colo.	100	....	....	....	....	....	....	2¼	2¾	3½	2¼	2¾	....	2,700
Col. Fuel & I	Colo.	100	51¾	51	52	51¾	....	....	56¾	51	6.¾	57¼	58¾	..	56,35
Col. & H.C.&I.	Ohio.	100	18	17½	....	....	....	....	18	....	21¾	19	18½	....	10,60
Del. & Hud.	N. Y.	100	123	122¾	123¾	122¾	....	....	124½	123¾	125¼	123¾	123¾	....	8,763
Federal Steel	.....	100	60¾	59¾	6.¾	59¾	....	....	61½	60¾	6.¾	61¼	6.¾	....	42,13
" " pf	.....	100	82	....	81¾	....	....	....	82¾	81¾	83¼	82½	81½	....	6,327
National Lead	N. Y.	100	....	....	....	....	....	....	....	....	31¾	31¼	....	....	620
" " pf	Md...	100	....	....	111¾	....	....	....	111¾	....	....	....	....	....	180
National Salt	.....	100	48	47	47¾	46¾	....	....	47	46	47	46	47	45	500
" pf	.....	100	78¼	77½	78¼	77	....	....	79	76	79	76	78	75	....
N. Y., Ont. & W.	N. Y..	100	27	26¼	27	26¾	....	....	27½	27	27½	27½	26¾	....	11,067
Reading, 1st pf.	Pa....	100	61	60½	61¾	61	....	....	62¼	60¾	62½	61¾	6.¼	....	9,925
" 2d pf.	"	10	33¼	3.¼	....	....	....	....	34¼	53¾	34¼	33¾	33	....	14,50
Republic I. & S.	.....	100	29¼	28¾	30	28¾	....	....	32¼	30¾	33¼	30¾	3.¼	....	71,198
" " pf	.....	100	7.¼	77½	78¾	77¼	....	....	79	78	78¾	77¼	77½	....	14,06
§StandardOil Tr	.....	100	466	464	470	469¾	....	....	470	468	48.	476	478	475	....
Tenn.C.,I.&R.R.	Ala.	100	98¾	96	99¼	98	....	....	108	99	117¾	109¾	111	....	91,515

‡ Ex-dividend * Holiday.

PHILADELPHIA PA.

NAME OF COMPANY.	Location.	Par Val.	Aug 31. H.	Aug 31. L.	Sept. 1. H.	Sept. 1. L.	Sept. 2 H.	Sept. 2 L.	*Sept. 4. H.	*Sept. 4. L.	Sept. 5. H.	Sept. 5. L.	Sept. 6. H.	Sept. 6. L.	Sales
Am. Alkali	.....	.....	4.75	4.63	....	....	4.75	....	....	....	4.75	4.63	4.75	4.75	15,772
" " pf.	.....	.....	3.13	3.00	....	....	3.00	....	....	....	2.88	....	2.75	....	3,190
Bethlehem Ira	Pa.	.....	....	....	....	....	63.00	....	....	....	62.25	....	....	....	106
Bethlehem St'l	"	$50	....	....	....	....	....	....	....	....	....	....	21.50	....	100
Cambria Iron	"	50	....	....	....	....	45.00	....	....	....	....	....	....	....	51
Cambria Steel	I.T.	50	28.00	27.75	28.00	27.88	28.00	27.88	....	....	32.75	32.50	33.50	33.00	4,311
Choctaw. pref.	Pa.	50	48.00	....	....	....	....	....	....	....	49.00	48.10	48.25	....	122
Lehigh Val.	"	50	27.00	....	27.00	26.75	27.00	....	....	....	27.00	....	27.13	27.00	620
Penna. R. R.	"	50	67.75	....	28.50	28.38	67.75	....	....	....	67.75	....	68.00	....	392
Susq I & S.	"	....	7.63	7.50	....	....	7.50	....	....	....	7.7.	7.50	7.63	7.38	1,800
United Gas I.	"	50	168¾	....	170	169¾	169	....	....	....	170¾	....	....	....	183
Welsb. of Can	Can.	100	....	....	....	....	....	....	....	....	....	....	....	....	....
Welsb. Coml.	"	100	....	....	....	....	....	....	....	....	....	....	....	....	50
Welsb. Light	"	100	54.25	53.00	53.00	52.00	53.00	53.00	....	....	55.00	54.88	55.00	....	1,115

Total shares sold, 27,842. * Holiday

VALPARAISO. CHILE.*

July 29.

NAME OF COMPANY.	Location.	Capital paid.	Sh. Val. paid up.	Last Div'nd. Amt.	Last Div'nd. Date.	Prices. Bid.	Prices. Asked.	Prices. Last sale
Arturo Prat, silver	Chile..	$3,800,000	$100	4 p. c.	1897	19	20	20
Caracoles, silver	"	315,000	100	10 "	1894	....	....	....
Huantajaya (mine) silver	"	1,000,000	100	13 "	1894	....	....	....
Huanchaca, silver	Bolivia..	8,000,000	25	4 "	1895	26	28	29
Oruro, silver	Chile....	800,000	200	....	....	280	290	280
Todos Santos, silver	"	2,000,000	100	1 "	1895	4	5	6
Agua Santa nitrate	"	3,000,000	50	5 "	1898	150	151	150
Antofagasta, nitrate	"	2,000,000	200	3 "	1898	110	115	115
So. Internacional, nitrate	"	1,800,000	60	.....	.....	.....	.....	.....
Union, nitrate	"	5,000,000	200	.....	.....	43	50	46

* Special report of Jackson Bros. Values are in Chilean pesos or dollars.

BOSTON MASS.†

NAME OF COMPANY.	Par val.	No. of shares.	Aug. 31. H.	Aug. 31. L.	Sept. 1. H.	Sept. 1. L.	Sept. 2. H.	Sept. 2. L.	*Sept. 4. H.	*Sept. 4. L.	Sept. 5. H.	Sept. 5. L.	Sept. 6. H.	Sept. 6. L.	Sales
Aetna, cons. g.	$5	100,000	....	....	....	....	....	....	....	....	4.25	....	4.50	4.25	400
Adven'u'e,Cons	25	100,000	9.25	9.00	....	....	9.00	....	....	....	9.00	....	9.00	....	225
Allouez	25	80,000	....	....	....	....	....	....	....	....	6.75	....	....	....	100
Am. Z., L. & S.	25	60,000	60.00	....	....	....	....	....	....	....	....	....	67.00	62.00	1,125
Anaconda	25	1,200,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Arcadian, c	25	150,000	74.25	74 00	....	....	74.00	....	....	....	72 00	70 25	71 50	70.50	1,862
Arnold, c	25	60,000	4.75	14.50	....	....	14.00	....	....	....	14.50	14 25	14 00	....	456
Ashbed. c	25	40,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Atlantic, c	25	40,000	29.75	29 00	30.50	29.00	30.50	....	....	....	31.50	....	30.50	30.00	990
Baltic, c	25	100,000	26 00	25 75	26 00	....	26.00	....	....	....	26 50	....	27 00	25.50	552
Bingham, c.&g.	10	30,000	17 50	17.13	17.00	16.00	17.00	16 00	....	....	....	....	16.25	....	1,145
Bonanza, g	10	800,000	2.00	1 88	....	....	2 25	2.00	....	....	2 13	2.00	2.13	2.00	19,333
Boston q.	10	100,000	6 50	....	....	....	....	....	....	....	7.00	....	6.88	....	350
Boston & C. C.	2	20,000	....	.30	....	....	....	....	....	....	.25	....	25	....	3,000
Bos.&Mon.Tr.R	25	150,000	....	....	353	352	....	....	....	....	350	....	350	....	125
British Col.	5	200,000	12.88	11.88	11.50	....	11.75	1.50	....	....	11.50	....	12.00	11.00	830
Butte & Bost., c	10	200,000	75.00	72 00	....	....	....	....	....	....	....	....	....	....	420
Cal. & Hecla, c.	25	100,000	840	....	840	....	....	....	....	....	840	....	840	....	42
Catalpa, s	10	800,000	42¾	....	40	....	....	....	....	....	40	....	....	....	850
Centennial, c.	25	90,000	36.0	....	38 0	35 5.	....	....	....	....	38 0	....	37.00	35 13	1,905
Cochitt, g	10	150,000	20 00	18.75	18.63	17.75	19.00	18.0.	....	....	20.50	18.13	21.38	20.25	36,296
Cochitt Rgte	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Copper Range	40	100,000	....	....	....	....	....	....	....	....	42.50	....	....	....	....
Crescent, s	10	800,000	....	....	....	....	....	....	....	....	....	....	.20	....	100
Dominion Coal	100	150,000	54 75	54 0.	55 00	....	....	....	....	....	54 25	....	54.00	....	1,385
do. pref	100	20,000	....	....	1 8	....	118	....	....	....	118	117¾	....	....	17
Federal Steel	100	464,843	62 00	60.25	60 .5	59 88	....	....	....	....	61 75	60.25	62.75	61.50	11,159
do. pref	100	332,610	82.88	....	82.5.	82.0.	....	....	....	....	82.5.	82.00	82 50	....	305
Franklin, c	25	100,000	20 38	20 13	20.50	20.13	20.50	....	....	....	20.50	....	21.00	20.25	595
Gold Coin, g	5	200,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Humboldt, c	25	40,000	....	....	....	....	....	....	....	....	....	....	....	....	....
I. Royal Con. c	25	100,000	49.50	....	49 75	....	....	....	....	....	....	....	48.00	....	350
Mass. Con	25	100,000	12 00	....	12 00	....	....	....	....	....	....	....	13.00	12 50	145
Melones	10	167,577	....	....	4 00	....	....	....	....	....	3 75	....	....	....	200
Merced, g	15	100,000	3.00	....	14.00	13.88	....	....	....	....	14 00	....	14.00	13.00	650
Michigan	25	100,000	....	....	12.50	....	13.00	12.25	....	....	1.00	....	12.00	....	210
Mohawk, c	25	100,000	22 50	....	25 00	23.00	23 50	....	....	....	25.0	24.50	25.25	25.00	1,542
Naps	7	100,000	....	....	....	....	....	....	....	....	....	....	10.75	10.50	100
New Idria	5	100,000	....	....	....	....	....	....	....	....	12 50	....	12.50	....	250
N.A.Gold Dre'g	10	100,000	....	....	....	....	....	....	....	....	....	....	33 00	....	125
Old Colony, c	25	100,000	10.25	10.00	....	....	....	....	....	....	10 00	....	....	....	255
Old Dominion,c	25	150,000	36 0.	35 00	35.50	....	35.50	....	....	....	35.50	35.13	36.13	35 00	635
Osceola, c	25	93,000	38.00	....	38 00	....	....	....	....	....	38.00	....	38.25	38.00	682
Parrot, s c	10	229,83.	52.00	....	51 50	....	....	....	....	....	52.00	....	52.00	51.75	370
Pioneer, g	10	100,000	3.25	2.50	3.00	3 13	3.38	3.13	....	....	3.38	....	3.25	....	2,795
Quincy, c	25	100,000	160	....	....	....	....	....	....	....	160	....	161	....	162
Rhode Island	25	100,000	7.00	....	....	....	....	....	....	....	7.0	6.75	7.25	....	365
Santa Fe, g. & c	10	250,000	15.88	15.50	16.00	14.88	15 25	15 00	....	....	15.00	14 75	15 00	14.50	9,290
San. Ysabel, g.	5	130,000	14.38	14.13	16.00	14 00	13.63	....	....	....	14 13	....	14.38	14 00	575
Tamarack, c	25	60,000	243	....	....	....	....	....	....	....	228	227	....	....	72
Tecumseh, c	25	80,000	....	....	....	....	....	....	....	....	6.00	5.75	6.00	....	640
Tri Mountain	25	100,000	10.75	....	11 75	0.75	11.50	11.00	....	....	11 38	11.0	11.50	11.00	2,435
Union C. L.	25	80,000	....	....	....	....	....	....	....	....	....	....	....	....	....
United States	25	250,000	40 88	40.25	40 63	40 25	40.38	....	....	....	40.63	40.50	43.00	41.25	16,237
Utah Cons,g &c	5	300,000	44 00	....	43 7	43.50	....	....	....	....	....	....	42.50	42.50	460
Victor	5	200,000	....	....	6 10	....	....	....	....	....	....	....	....	....	10
Victoria	25	100,000	6.75	6 25	6 38	....	6.50	....	....	....	6 13	6.00	6.50	6.25	690
Washington	25	40,000	2.13	1.75	2 13	....	2.13	....	....	....	2.38	....	2.63	2.25	8,820
White Knob	100	50,000	11.0	....	13.00	12 00	12.50	....	....	....	13.50	13.00	15 50	15.00	1,950
Winona, c	25	100,000	11.25	....	....	....	....	....	....	....	1.50	....	11.25	....	430
Wolverine, c	25	60,000	....	....	46.50	....	....	....	....	....	46.50	....	....	....	57
Wyandotte	25	100,000	....	....	....	....	....	....	....	....	....	....	5.50	....	10

†Official quotations Boston Stock Exchange. Total sales, 128,207. * Holiday.

COLORADO SPRINGS, COLO.‡

NAME OF COMPANY.	Par val	Aug. 3. B.	Aug. 3. A.	Sept. 1. B.	Sept. 1. A.	Sept 2. B.	Sept 2. A.	Sept 4* B.	Sept 4* A.	Sept. 5. B.	Sept. 5. A.	Sept. 6. B.	Sept. 6. A.	Sales.
Alamo	$1	.09¾	.09¾	.10	.10¼	10	.10¼	....	....	10	10¼	.10¾	.10¾	8,000
Anaconda	1	.50	.49	.50¼	49½	.50	....	....	....	.49¾	.50	.49¾	.50	6,650
Arg'ntumJ	1	.28½	29¼	28¼	.30	29	.30	....	....	29	.30	.29	.30	9,300
Cadillac	1	.02¾	.03	.03¾	.03¾	....	....	....	....	....	....	....	....	2,000
C. C. Con	1	.13¾	.14¾	.15	.15¾	.15¾	....	....	....	17¾	.18	.18	.18¾	9,100
Dante	1	17¾	17¾	.18	....	....	....	....	....	....	....	....	....	8,000
EltonCon	1	1 07¼	1.09¾	1.10	1.1¾	1.12	1.13	....	....	1.22	1 25	1.26¾	1.28	7,200
El Paso G.	1	.49	.44	.46	.43¾	47	....	....	....	.45	48	.44	.50	....
Favorite	1	.05	05¾	.05¼	.05¾	....	....	....	....	....	....	....	....	15,000
Findley	1	.18	.19	.18	.18½	.17¾	18	....	....	.17¾	18	.17½	.18	1,000
Golden Fl.	1	....	....	....	....	.25	.30	....	....	.27	30	.28½	30	500
Gold Hill	1	.03¾	.04	.03¾	.04	....	....	....	....	....	....	....	....	5,000
Ing. Con	1	.09¾	10¾	.10¼	.1 ¾	....	....	....	....	....	....	....	....	....
Isabella	1	.89	9	.89¼	.90	.89¾	.90¾	....	....	95¾	.96	.90	.93	6,200
Jack Pot	1	.67¾	68¾	.73¾	.74¼	.69	.70	....	....	72½	.73¼	.70½	.70¾	29,100
Lexington	1	.14¾	.14¾	14¾	.14¾	....	....	....	....	....	....	....	....	17,000
Magnet R	1	.05¼	.05¾	.05½	....	....	....	....	....	....	....	....	....	10,000
Matoa	1	.32	34	.34	34¾	.35½	.34¼	....	....	.33½	.34¼	.34	.35	1,200
Midway	1	.07¾	.07¾	.07¾	.07¾	....	....	....	....	....	....	....	....	22,000
Mobile	1	.05½	.05¾	.05¼	.05¾	....	....	....	....	....	....	....	....	5,000
Mollie Gib.	1	.24	.26	.23½	....	.25½	.28	....	....	....	....	.25¼	.28	2,000
Montreal	1	.09¾	.10¾	.10	.11	....	....	....	....	....	....	....	....	3,000
Moon-A'c'r	1	95	1.00	....	....	1 00	1.08	....	....	1.06¼	1.07¾	1.05	1.08	500
Mt. Rosa	1	....	.34	.36¼	.35	.38	....	....	....	.35	.36	.35	.35½	800
New Haven	1	03¾	01	.04½	.04¾	....	....	....	....	....	....	....	....	21,000
Pinnacle	1	.04	06¼	.07¾	.08	....	....	....	....	....	....	....	....	12,000
Pilgrim C.	1	.07¾	.08¼	.08	....	....	....	....	....	....	....	....	....	7,000
Pinnacle	1	29¾	29¾	....	.30	.29½	.30	....	....	.30¾	.30¼	.31	.31½	18,000
Portland	1	2.20	2.25	2.25	2.40	2 50	2.60	....	....	2.59½	2.60	2.40	2.50	5,150
Prince &Lb.	1	.04¾	.04¾	04¾	.05	....	....	....	....	....	....	....	....	1,000
Princess	1	.06¾	.07	06¾	.06¾	....	....	....	....	....	....	....	....	26,000
Pythias	1	.06	.06¼	.06¾	.06¼	....

STOCK QUOTATIONS.

DENVER, COLO.‡

NAME OF COMPANY.	Par val.	Aug. 28 B.	Aug. 28 A.	Aug. 29 B.	Aug. 29 A.	Aug. 30. B.	Aug. 30. A.	Aug. 31. B.	Aug. 31. A.	Sept. 1. B.	Sept. 1. A.	Sept. 5. B.	Sept. 5. A.	Sales.
Mines:														
Anac'da G.	$5	.....	.53	.50	.....	.51	.....	.50	.52	.49½	.52	.50	.....	1,000
Arg. J.	1	.28¾	.....	.20	.....	.....	.....	.28½	.....	.30	.31½	.30	.....	.....
Bankers	1	.11½	.....	.....	.12¾	.11½	.12¼	.11	.13	.11¾	.14	.11½	.....	.....
Cripple C.C.	1	.13	.14	.13¾	.....	.14	.14½	.14	.14½	.14½	.15¼	.15½	.17	4,000
Della S	1	.....	.....	.03	.....	.05	.....	.03	.....	.03	.....	.05	.....	.....
Elkton Con	1	1.04	.....	1.03½	1.04½	1.06	.....	1.07	1 09	1.09	1.11	1.10	1.13	.....
Findley	1	.....	.19¾	.18½	.20	13	.....	.....	.19	.....	.9	.....	.....	.....
Garf. Con.	1	.15¾	.18¾	.....	.....	.....	.....	.15	.18¾	.15¾	.15¾	.15¼	.....	500
Gold Coin.	1	.....	.....	.....	.....	2.06¼	.....	.....	.....	.....	.....	.....	.....	.....
Goldstone.	1	.12¼	.02¾	.02½	.02¾	.02¼	.0 3¾	.02¼	.02¾	.02¼	.02¾	.02¼	.02¾	6,000
Indepnd'nc	1	.51	.....	.....	.....	.....	.....	.46	.....	44	.....	.....	.....	.....
Iron Clad	1	.05¾	.06¾	.03½	.06½	.05¼	.....	.05¾	.06¾	.....	.....	.06	.06¾	100
Isabella	1	.88	9	.83¾	39¼	.85	.89	89	.89¾	89	.....	.89¾	.91	8,000
Jack Pot	1	.....	.60½	.63	.64	.64	.....	.....	.....	.69¼	.....	.69	.....	100
Jefferson	1	.....	.....	.....	.....	.....	10	.....	.10¾	.09¾	.....	.....	.....	.....
Keystone	1	.12¼	.13¾	.12¾	.13	.12¾	.13	.....	.....	.....	.....	.12¼	.....	.....
LosAngeles	1	.....	.....	.09¾	.....	.....	.....	.09	.....	.10	.9¾	.9¾	.10¼	1,000
Mollie Gib.	5	.25	.28½	.25	.30	.....	.29	.24	.28	.24	.27½	.25	.28	.....
NewZealnd	1	.37	.40	.38	.....	.39½	.46	.40	.46	.....	.47	.46	.....	500
Ophir	1	.42¾	.47¾	.42	.46	.41¾	.45¾	.42	.46	.42	.50	.43½	.50	.....
Pharmacist	5	.....	.....	.....	.....	.04¾	.....	.04¾	.04¾	.04¾	.....	.....	.....	1,000
Portland.	1	2.01¾	.....	2.01	.....	2 10	.....	2.25	.....	2.25	.....	2.50	3.00	1,000
Specimen	1	.11	.....	.12	.12¼	.....	.....	.....	.....	.....	.....	.....	.....	1,000
Union Gold	1	.35¼	.39½	.34	.35	.....	36	.....	.36	.....	.36	.34¼	.36	.....
Work	1	.28¾	.....	28¼	.29¼	29¼	.....	.29½	30	.33	.....	.34	.....	1,600
Prosp'cts.														
C C Imp	1	.0044	.006	.0043½	.0044	.0044	.0043½	.0043½	.005	.004	.0048	.0044	.....	7,000
Gene Field.	1	.....	.....	.....	.....	.0039	.....	.003	.....	.003½	.0043	.0039	.0044	.....
Illinois	1	.011¾	.012½	011	.....	.01¾	.....	.011	.01¾	011	.....	.11	.....	27,000
Old Gold	1	.019	.02	.019	.013	.019	.02	.01	.019	.01	.02	.0 3	.015	1,000
Puritan	1	.007½	.008	.006	.008	0.6¾	.007	.0 6½	.007	.006	.007	.0 6¾	.007	9,500
Miscell.														
Acacia	1	.16¾	.....	.....	.16¾	.16½	.16½	.16½	.....	.16½	.16¾	.16¾	.....	2,500
Alamo	1	.....	.09¾	.....	09¼	.09	.09¼	.....	.09¾	.....	.10¼	.....	.10	.....
Aola	1	.03¼	.03¾	.03¾	.....	.....	.....	.03¼	.04¼	.04	.....	.04½	.....	13,000
Battle Mt.	1	.37½	.....	38	.38½	.36½	.....	.36	.....	.36½	.....	.37	.....	3,000
C. C. & M.	1	.12¾	.....	12¾	.13	.12¾	.....	.12¼	.12¾	.2	.12¾	.....	.....	1,000
De Beers	1	.....	.....	.....	.....	.012	.....	.....	.....	.009	.....	.....	.....	.....
Des Moines	1	.04½	.....	.04¾	.....	.04¾	.....	.04¾	.....	.04¾	.....	.04¾	.....	.....
Favorite	1	.05¼	.05½	.05¼	.....	.....	.04	.....	.....	.....	.05½	.....	.05¼	1,000
G'id'n Eagle	1	.03	.....	.....	.....	.....	.....	.....	.....	.....	.....	.03¾	.04½	1,000
Golostone	1	.02½	.02¾	.02¾	.02½	.02¾	.02¾	.02¼	.02¾	.02¼	.02¾	.02¼	.02¾	6,000
Gr'nite Hill	1	.03	.03¾	.03¼	.....	.03¾	.03¾	.13½	.....	.03¼	.....	.03¾	.....	1,000
Magnet R.	1	.05¾	.05¾	.05½	.05¾	.05¾	.05¾	.059	.05¾	5¾	.....	.05½	.05¾	3,000
Mobile	1	.....	.....	.....	.....	.05¾	.....	.....	.....	.....	.....	.05¾	.05¾	.....
Mt. Beauty	1	.09	.10½	.03¾	.....	09	.....	.08¾	.....	.09¾	.....	.08½	.....	1,000
Trachyte	1	.07¾	.....	.08¾	.....	.08¾	.....	.09	.....	.....	.....	.....	.10	1,000
Wh.of For.	1	.....	.....	.....	.....	.....	.....	.01¾	.01¾	.01¼	.01½	.01¼	.01¾	.....

‡ Official Quotations Denver Stock Exchange. Total sales, 102,800 shares.

SAN FRANCISCO, CAL.

NAME OF COMPANY.	Location.	Par. value.	Aug. 31.	Sept. 1.	Sept. 2.	Sept. 4 *	Sept. 5.	Sept. 6.
Alpha Con.	Nev.	1.00	.06	.06	.06	.....	.06	.16
Alta	"	2.00	.06	.06	.06	.....	.05	.06
Andes	"	3 00	.17	.16	.17	.....	.16	.16
Belcher	"	3 00	.34	.34	.37	.....	.34	.35
Best & Belcher	"	3 00	.64	.63	.62	.....	.57	.59
Bullion	"	1.00	.06	.06	.07	.....	.07	.07
Caledonia	"	3.00	.65	.70	.76	.....	.70	.69
Challenge Con.	"	3 00	.35	.35	.36	.....	.33	.34
Chollar	"	3.00	.36	.38	.39	.....	.37	.41
Confidence	"	3.00	.80	.80	.80	.....	.80	.79
Con. California & Virginia	"	2 50	1.90	1.85	1.80	.....	1.70	1.70
Cons. Imperial	"	1.00	.01	.01	.01	.....	.01	.01
Crown Point	"	3.00	.23	.22	.22	.....	.21	.22
Gould & Curry	"	3.00	.34	.33	.33	.....	.30	.32
Hale & Norcross	"	3 00	.31	.34	.34	.....	.32	.....
Julia Con.	"	1.00	02	.02	.02	.....	.02	.02
Justice	"	2.00	.15	.16	.14	.....	.14	.14
Kentuck Con.	"	1 00	.03	.03	04	.....	.01	.13
Mexican	"	3.00	.52	.51	.51	.....	.48	.49
Occidental Con.	"	3 00	.19	18	.19	.....	.21	.21
Ophir	"	3 00	1.15	1.15	1.14	.....	1.05	1.10
Overman	"	2.00	.14	.13	.14	.....	.14	13
Potosi	"	3.00	.2	36	.36	.....	.34	.34
Savage	"	2 50	.18	19	.19	.....	.17	.28
Seg. Belcher & M.	"	2.00	.16	.06	.16	.....	.06	06
Sierra Nevada	"	3.00	.75	75	.83	.....	.78	84
Standard	Cal.	10.00	2 65	2.65	2.75	.....	2.65	2.70
Union Con.	Nev.	2 50	.24	22	.25	.....	.28	.42
Utah Con.	"	1.00	.08	.07	.09	.....	.13	.13
Yellow Jacket	"	3.00	.30	.30	30	.....	.28	.28
.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....

Official telegraphic quotations of San Francisco Stock Exchange * Holiday.

TORONTO, CAN.*

NAME OF COMPANY.	Par val.	Aug. 30. B.	Aug. 30. A.	Aug. 31. B.	Aug. 31. A	Sept 1. B.	Sept 1. A.	Sept. 2 B.	Sept. 2 A.	*Sept. 4. B.	*Sept. 4. A.	Sept 5. B.	Sept 5. A	Sales
Ontario:														
Alice A	$1	.15	.16	.17	.22	.15	17½	.16	.18	.....	.....	.14½	.19	500
Empress	1	.03	.06	04¼	.06	04½	.05½	.04¾	.05¼	.....	.....	.04¾	.06	1,000
Golden Star	1	.42¼	.46¾	.41¾	.4 4¼	.41	43	.40¾	.41¾	.....	.....	.43	.44½	9,000
J. O. 41	1	.03¾	.04¾	.03¾	.04½	.03¾	.04½	.03¾	.04¾	.....	.....	.0 3¾	.04¾	8,500
Olive	1	.79	.85	.79	.85	.79	.85	.85	.....	.....	.....	.85	.....	1,000
Sup G. & C.	1	.16¼	.25	.15	.25	.....	.....	.....	.....	.....	.....	.....	.....	500
British Col.:														
Ainsa-ka	1	.40	44½	.40¼	.41	.40	42½	.40¾	.41	.....	.....	.40	.42	5,500
Big Three	1	19	.25	17	.28¾	.18½	21	.21¾	.....	.....	.....	.24½	.28	16,000
Carib'oMc'K	1	1.25	1.31	1 24	1.31	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crows N C'l	25	.....	.....	44 00	51.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
Deer l'ine 2	1	.23½	.25	.23	.25	.23	.24	.20	.24½	.....	.....	.23½	.25	1,000
Even'g Star	1	.09	.12	10½	.12	.....	.12	.....	.10¼	.....	.....	.....	.10¼	1,000
Iron Mask	1	68	.72	.70	.75	71	.73	.....	.71¾	.....	.....	.64	.72¼	3,000
Minn-haha	1	.14	.18	.14¾	.18	.15¼	.17	.16¼	.19	.....	.....	.16	.18	16,200
MonteCristo	1	.06	.08	.06	.05¾	.07	09	.06¾	.08	.....	.....	.06¾	.05¾	.....
Morrison	1	.15	.18	.15	.18	.13	18	.....	.15¾	.....	.....	.....	.....	11,000
Noble Five	1	.18¾	.22	.18¾	.25	.18	.25	.....	.....	.....	.....	.16¼	.25	.....
N'rth Belle	1	.02¾	.03	.02	03	.01¾	.03	.02¼	.03	.....	.....	.02	.02¾	1,000
Oldfro'slices	1	1.08	1 13	1.09	1.15	1.11	1 15	.....	.....	.....	.....	.....	.....	1.00
Rambler C	¼	.39	.42¾	41	45	42	.45	.47	.42¾	.....	.....	41	43	28,335
Rathmullen	1	.07¾	08¾	.07¾	.08¾	07¾	.08¾	.07¾	08¾	.....	.....	.08	.08¾	24,500
Republic	1	1.24	1 3?	1.22	1.30	1 24	1.30	.....	.....	.....	.....	1.18	1.28	.....
Smuggler	1	.01	02	.01	.02¾	.0 9¾	.02	.01¼	.....	.....	.....	.00¾	.01¾	10,000
Van Anda	1	.10	1 4¾	.10	.10¾	10	.10¾	.0	.10¾	.....	.....	.0	.10¾	15,000
Victory Tri.	1	.05¾	06¾	.05	.07	.05¼	07	.03	.08	.....	.....	.05¼	07	1,500
War Eagle												3.42	3.53	500
Waterl'o	.10	.09½	.1	.10	.11	.10	.12	.09¾	1 ¾	.....	.....	.09¼	.10¾	1.500
White Bear	1	.04¾	.05	.0 3¾	.04¾	.04	.04¾	01	.04¾	.....	.....	04	.04¾	12,500
Wonderful	1	.04¾	07	.0 3¾	.07	.04¾	.07	.07	.....	.....	.....	.07	.....	.....
Develop Co.														
B.C.G F'ld's	1	.04¾	.05¾	.04	.05	.04	05	.04¾	05¾	.....	.....	.04	.05¾	.....
Can. G F S	0.10	.06	07¾	.03¾	.08	.03¾	07½	.06¾	.07¾	.....	.....	.06½	.08	.....
Gold Hills	1	.07½	.09¾	07¾	.09	.07	09	.07¾	.08	.....	.....	.07¾	.08½	6,875

*Official quotations of the Standard and Toronto Mining and Industrial Exchanges. Total shares sold, 175,328. * Holiday.

SALT LAKE CITY, UTAH.* Sept. 3.

STOCKS.†	No. of shares	Par val.	Bid.	Asked.	STOCKS.†	No. of shares.	Par val.	Bid.	Asked
Ajax	300,000	$10	$1.00	$1.50	Homestake	400,000	$1	$0 09½	$0 14
Alice	400,000	25	.60	.61½	Horn Silver	400,000	25	1 22½	2.00
Anchor	150,000	10	.50	.....	Joe Bowers	400,000	1	.18¾	.18¾
Buckeye	500,000	1	.....	.....	Little Pittsburg	400,000	5	.05¾	.07¾
Bullion-Beck & Ch.	100,000	10	5.25	6.00	Lower Mammoth	150,000	1	.25	.30
Centennial Eureka	30,000	50	60 25	.....	Mammoth	400,000	5	1 94	.....
Chloride Point	900,000	1	.42¾	.45	Mercur	200,000	25	7 08	7.22½
Daisy	500,000	3	.25¼	.26¾	Northern Light	400,000	5	.27¾	27¾
Dalton	500,000	5	.01¾	.02¾	Omaha	300,000	2	.23	.30
Dalton & Lark	2,500,000	1	.08¾	.10¾	Ontario	150,000	100	8.00	9 00
Daly	150,000	20	1.37	1.50	Richmond-An.	500,000	1	11	.....
Daly West	150,000	20	13 03	13 15	Sacramento	1,000,000	5	4¾	50
Dexter	200,000	5	2.01	2.22½	Silver King	150,000	20	48 00	.....
Eagle	150,000	1	.05	.06¾	Star Consolidat'd	500,000	1	.57	.75
Eagle & Blue Bell	250,000	1	1.65	1.85	Sunbeam	250,000	1	.55½	58
Emerald	300,000	1	.11	.....	Sunshine	250,000	10	.85	.64
Four Aces	250,000	1	.28	.29	Swansea	100,000	5	4 20	4.47
Galena	100,000	10	.39	.40¾	South Swansea	150,000	1	1.70	1 73½
Geyser-Marion	300,000	5	.40	47	Utah	100,000	1	.70	1 07½
Grand Central	250,000	1	6 97	7.23	Valeo	200,000	10	.76¾	.80

*From Our Special Correspondent. † Utah companies. ‡ Mines in Vanderbilt, Cal. Mines in Tuscarora, Nev.

ROSSLAND, BRITISH COLUMBIA.* Aug. 31.

NAME OF COMPANY.	No. of shares.	Par value.	Selling price.	NAME OF COMPANY.	No. of shares.	Par value.	Selling price.
Brandon & Gold. Cr.	1,500,000	$1	$0.28	Lerwick	500,000	$1	$0.15
Brit. Amer. Corp'at'n	7,500,000	5	5 00	Lily May	1,000,000	1	.08
Brit.Col. Dev. Co.	1,500,000	2½	3.25	Lon.&Van.Fin.Dev.Co	500,000	5	.....
Canadian Gold Fields	10,000,000	0.10	.10	London B. C. Gold F.	350,000	5	7.50
Cariboo	1,500,000	1	1.25	Monte Cristo	1,000,000	1	.....
Commander	500,000	1	.....	New Gold Fields, B.C.	250,000	1	5.50
Deer Park	1,000,000	1	.....	Novelty	1,000,000	1	.....
Dundee	1,000,000	1	.....	Queen Bess Prop.	120,000	5	5.50
Evening Star	1,000,000	1	.12	Rambler Con.	1,000,000	1	.25
Fern	200,000	½	.40	Roco	1,200,000	1	.....
Gold Fields of B.C.	3,000,000	2½	.....	Red Mt. View	1,000,000	1	.....
Hall Mines	250,000	5	3.50	St. Elmo	1,000,000	1	.05
Hattie Brown	1,000,000	1	.....	St. Paul	1,000,000	1	.....
Homestake	1,000,000	1	.10	Sarah Lee	1,000,000	1	.....
Iron Colt	1,000,000	1	.....	Silver Queen	1,500,000	1	.15
Iron Horse	1,000,000	1	.....	Slocan Star	500,000	1	1.25
Iron Mask	500,000	1	.67	Vic Tr. MinesDev. Co.	25,000	5	.....
Josie	700,000	1	.....	Virginia	500,000	1	.....
Jumbo	500,000	1	.10	War Eagle Con	2,000,000	1	3.60
Kenneth	1,000,000	1	.....	Waverly Mines	100,000	5	.....
Keystone	1,500,000	1	.....	White Bear	3,000,000	1	.10
KootenayGold Fields	20,000	5	.....	Wild Horse	400,000	1	.....

* From Our Special Correspondent.

MEXICO. Aug. 25.

NAME OF COMPANY.	No. of shares.	Last div'd.	Prices. Op'g	Prices. Cl'g.	NAME OF COMPANY.	No. of shares.	Last div'd	Prices. Op'g.	Prices. Cl'g.
Chihuahua:					Hidalgo:				
Gloria	1,500	.....	$50	$50	Real del Monte	2,354	10 00	700	930
Durango:					San Francisco Hc	6,000	2.00	190	190
Barradon y Cab	2,400	.....	40	40	San Rafael y An	1,200	14.00	1,000	1,000
Candelaria de Pan.	1,200	.....	20	20	do. aviado	1,200	6.00	420	400
Capuzays	2,400	.....	30	30	do. del Oro	3,000	5.00	20	20
Penoles	2,300	30.00	2,000	3,000	Soledad	960	5.00	290	300
Restauradora	10,000	.....	20	20	Sorpresa	960	5.00	240	240
Rosario y Anexas	4,800	.....	10	10	Union Hacienda	2,000	5.00	0	360
Guanajuato:					Mexico:				
Angustias	2,400	5.00	320	330	Coronas	500	.....	5	75
Cinco Senores y An	2,000	15.00	340	360	Esperanza y An	3,000	10.00	1,550	1,575
El Oro	500	.....	30	30	Michoacan				
do. pref.	2,000	.....	20	30	Luz de Borda ava	4,000	.....	30	30
Guadalupe Hacie'a	10,000	2.00	210	225	Pueblo:				
Trinidad, aviador	2,000	.....	60	70	Tlauzingo	2,400	.....	27	28
do. aviada	400	.....	40	50	S. Luis Potosi:				
Zona Minera de Paz	2,400	.....	65	60	Concep. y An	3,000	.....	290	315
Hidalgo:					Sta. MariadelaPaz	2,400	10 00	720	810
Amistad y Concord	9,600	1.47	20	25	Zacatecas:				
Arevalo	720	.....	200	200	Asturianas y An	2,500	10.00	175	195
Bartolome de Med.	2,000	3.00	70	65	Cabezon	2,400	.....	15	15
Carmen	1,100	7.75	450	4 0	C'delar. de Pinos	2,500	.....	20	150
Las de Maravillas	900	.....	150	120	Palma de Somb	2,400	.....	100	30
Pabellon	800	27.80	30	20	.....	.....	.....	.....	.....

NOTE.—In most of the older Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Many newer companies have a nominal par value, usually $50 or $100. Prices are in Mexican dollars.

PARIS. Aug. 17.

NAME OF COMPANY.	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Op'ning.	Prices. Closing.
			Francs.	Fr.	Fr.	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs.	27,000,000	2,000	75.00	2,030.0	2,025.00
" " Firminy	"	" "	3,000,000	500	85.00	3,575 00	3,6 0.00
" " Five-Lille	"	" "	12,000,000	500	35.00	574 00	573.00
" " Huta-Bank	Russia	Iron & steel	.....	500	.....	4,4 0.00	4,380.00
" " la Marine	France	Steel mfrs.	20,000,000	500	40.00	1,685.00	1,680.00
" " Longwy	"	" "	.....	500	35.00	1,274 0.	1,270.00
Ansin	"	Coal	.....	.....	190.00	8,900.00	6,000.00
Blache-St. Vaast	"	Steel	.....	1,000	160 00	3,800.00	3,800.00
Boleo	Lower Cal.	Copper	.....	500	1.07	2,625 00	2,6 0.00
Brianak	Russia	Coal & Iron	.....	500	.....	1,255 00	1,260.00
Bruay	France	Coal	3,000,000	400	900.00	45,000.00	45,000.00
Cape Copper	S. Africa	Copper	15,000,000	50	1.80	111.00	109 00
Champ d'Or	"	Gold	3,375,000	25	3.75	47 50	45.00
Courrieres	France	Coal	600,000	200	80.00	2,390.00	2,405.00
De Beers Consolidated	S. Africa	Diamonds	98,750,000	125	15.62	700.50	688.00
Denain-Anzin	France	Steel	.....	500	20.00	995.00	1,000.00
Dombrowa	Russia	Coal	.....	500	12.50	1,060.00	1,055.50
Donetz	"	Steel	.....	.....	.....	1,3 5.00	1,305 00
Dourges	"	Coal	.....	1,000	800.00	24,000.00	25,000 0
Dynamite Centrale	France	Explosives	.....	500	12.50	510 00	510.00
Epinac	"	Coal	.....	2,500	20.83	575.00	575.00
Escombrera-Bleyberg	Spain	Lead	.....	500	35.00	1,042.00	1,045.00
Fraser River	Brit. Col'mb	Gold	250.000	25	.....	7 00	7.00
Huanchaca	Bolivia	Silver	40,000,000	125	5.00	80 0	80.00
Langlaagte Estate	S. Africa	Gold	31,750,000	25	11.25	86 00	86.00
Laguna	Chile	Nitrates	16,250,000	125	12.50	30.00	29 00
Laurium	Greece	Zinc & lead	16,300,000	500	30.00	615.00	619 00
Lautaro	Chile	Nitrates	13,750,000	125	.....	1? 7.00	107 00
Maifdano	Italy	Zinc	12,500,000	500	40.00	1,315.00	1,330.00
Metaux, Cie. Fran. de	France	Metal d'lers.	25,000,000	500	30.00	525.00	525.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	1,250.00	1,240.00
Naphte Baku	Russia	Petroleum	.....	.....	.....	800.00	804.00
Naphte, Le	"	"	.....	.....	.....	2,000 0	2,000.00
Naphte Nobel	"	"	.....	.....	.....	657.00	644.00
" parts	"	"	.....	.....	.....	13,3 0.00	13,0 0.00
Nickel	N. Caled'nia	Nickel	10,000,000	250	80.00	393.00	384.00
Penarroya	Spain	Coal, etc.	.....	300	65.00	2,450.00	2,445.00
Rebecca	Colo'do, U.S.	Gold	5,000,000	25	.....	5.75	5.75
Rio Tinto	Spain	Copper	40,625,000	125	47.70	1,145.00	1,139.00
" preferred	"	"	40,625,000	125	.....	180.00	134.75
Rive-de-Gier	France	Coal	.....	.....	.....	24.00	24.00
Robinson	S. Africa	Gold	68,750,000	125	12.50	285.00	260.00
St. Etienne	France	Coal	.....	.....	18.00	470 0.	468.00
Salines de l'Est	France	Salt	.....	500	11.50	269.00	260 00
Salines du Midi	France	" etc	.....	500	25.00	875.00	850.00
Sels Gem.de la Rus. Mer	Russia	" etc	.....	500	25.00	540.00	550.00
Tharsis	Spain	Copper	33,750,000	50	2.75	206.00	2 3.50
Vicoigne-Nœux	France	Coal	.....	1,000	700.00	24,125 00	21,125.00
Vieille Montagne	Belgium	Zinc	9,000,000	50	30.00	811.25	815.00

STOCK QUOTATIONS.

LONDON.

Aug. 25.

NAME OF COMPANY.	Country.	Authorized capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers
			£ s. d.	s. d.		£ s. d.	£ s. d.
Alaska Goldfields	Alaska	£300,000	1 0 0	2 1	Mar., 1899	1 1 3	1 3 9
Alaska-Mexican, £	"	200,000	1 0 0	0 4.8	July, 1899	17 6	1 2 6
Alaska-Treadwell, g	"	1,00,000	5 0 0	1 6	July, "	5 2 6	5 7 6
Anaconda, c., s	Montana	6,000,000	5 0 0	5 1¼	May, 1899	11 17 6	12 2 6
Chiapas, g., s., c	Mexico	252,500	1 0 0	.....	.....	5 0	0
Con. Gold Fields	"	300,000	1 0 0	.....	.....	17 6	1 0 0
De Lamar, g., s	Idaho	400,000	1 0 0	6	May, 1899	2 6	5 0
Elkhorn Priority (New), s	Colorado	87,500	1 0 0	1 0	June, 1898	1 3	3 9
Golden Gate, g	California	80,000	1 0 0	.....	.....	0 0	2 0
*Grand Central, g., s	Mexico	300,000	1 0 0	2 0	Aug., 1899	17 6	1 2 6
Hall Mines, c., s	British Col	250,000	1 0 0	1 0	May, 1898	10 0	12 6
Le Roi, g	"	1,000,000	5 0 0	.....	.....	7 0 0	7 2 6
Lillie, g	Colorado	250,000	1 0 0	2½	Sept., 1899	1 2 6	1 7 6
Montana, g., s	Montana	660,000	1 0 0	6	Apr., 1899	4 0	5 0
Mountain Copper	California	1,250,000	5 0 0	2 6	Sept., 1898	7 17 6	8 2 6
Newfoundland, c	Newfoundland	250,000	1 0 0	.....	.....	7 6	12 6
Palmarejo & Mexican, g., s	Mexico	80,000	1 0 0	.....	.....	2 0	3 0
Plumas-Eureka, g	California	261,250	2 0 0	0 6	Oct., 1896	1 3	2 6
Richmond, g., s., l	Nevada	270,000	5 0 0	1 0	Dec., "	5 0	6 3
Sierra Buttes, g	California	245,000	2 0 0	0 6	Apr., "		1 6
Colomb. Hydraulic, g	Colombia	75,000	1 0 0	6	Jan., 1899	5 0	7 6
Copiapo, c	Chile	200,000	2 0 0	6 0	July, 1899	3 12 6	3 17 6
Frontino & Bolivia, g	Colombia	140,000	1 0 0	1 6	June, 1899	2 2 6	2 5 0
St. John del Rey, g	Brazil	600,000	1 0 0	1 3	June, 1899	1 8 0	1 9 0
Tolima A., s., g	Colombia	70,000	5 0 0	5 0	July, 1897	2 5 0	2 15 0
Tolima B., s., g	"	30,000	5 0 0	5 0	"	1 0 0	1 10 0
Utah Con. g (High Pad Boy)	Utah	300,000	1 0 0	rts.	Mar., 1898	9 5 0	9 15 0
Velvet, g	British Col'mbia	100,000	1 0 0	.....	.....	1 10 0	1 12 6
Ymir, g	"	200,000	1 0 0	.....	.....	1 2 6	1 5 0
British Am. Corp.	"	1,500,000	1 0 0	rts.	Dec., 1898	1 3 6	1 4 6
Linares, l	Spain	45,000	3 0 0	12 6	Mar., 1899	7 10 0	8 10 0
Mason & Barry, c., sul	Portugal	630,000	2 0 0	5 0	May, 1899	3 15 0	4 0 0
Rio Tinto, c	Spain	1,625,000	5 0 0	1 7 6	May, 1899	44 2 6	44 7 6
" " pref	"	1,625,000	5 0 0	2 6	May, 1899	6 6 3	6 10 0
Tharsis, c	"	1,250,000	2 0 0	11 0	" 1898	7 15 0	8 5 0
Libiola, c	Italy	252,000	5 0 0	2 6	June, 1899	1 15 0	2 0 0
†Assoc. Gold Mines	W. australia	5,40,000	1 0 0	rts.	Aug., 1899	13 15 0	13 18 0
Broken Hill Prop., s	N.S. Wales	384,000	8 0 0	3 0	Aug., 1899	2 5 0	2 6 0
Great Boulder, Prop	W. Australia	1,750,000	2 0 0	1 6	July, 1899	1 15 6	1 16 6
*Hannan's Brownhill, g	"	110,000	1 0 0	7 6	Aug., 1899	13 15 0	14 0 0
Ivanhoe Gold Corp	"	1,000,000	5 0 0	5 0	July, 1899	11 0 0	16 15 0
Kalgurlie, g	"	120,000	1 0 0	rts.	Feb., 1899	2 7 6	12 12 6
*Lake View Consols, g	"	250,000	1 0 0	0 £1	1899	25 7 6	25 12 6
Mt. Lyell M. & R., l., c	Tasmania	975,000	3 0 0	3 0	July, 1899	11 0 0	11 5 0
Mt. Morgan, g	Queensland	1,000,000	1 0 0	7	Aug., 1899	5 5 0	5 12 5
Waihi, g	New Zealand	320,000	1 0 0	2 0	Sept., 1899	7 2 6	7 5 0
West Aust. Jt. Stk. L. & F	W. Australia	1,000,000	1 0 0	1 0	Dec., 1898	7 0	7 6
Champion Reef, g	Colar Fields	220,000	10 0 0	3 6	May, 1899	5 6 3	5 8 9
Mysore Gold, g	"	250,000	10 0 0	4 0	July, 1899	5 8 9	5 11 3
Nundydroog, g	"	242,000	1 0 0	2 0	" 1899	2 18 9	3 1 3
Ooregum, g	"	145,000	1 0 0	6	Aug., 1899	3 12 6	3 15 0
" pref. g	"	120,000	1 0 0	2 6	" 1899	4 18 3	4 18 9
Angelo, g	Transvaal	275,000	1 0 0	5 0	Mar., 1899	7 7 6	7 14 6
Bonanza, g	"	300,000	1 0 0	1 0	June, 1899	4 7 6	4 12 6
British S. Af., chartered	So. Africa	5,000,000	1 0 0	rts.	May, 1899	2 16 3	3 1 3
Cape Copper, c	"	600,000	1 0 0	5 0	July, 1899	4 0 0	4 2 6
" " pref	"	150,000	2 0 0	5 0	" 1899	4 0 0	4 5 0
City & Suburban (New), g	Transvaal	1,360,000	4 0 0	8 0	Aug., 1899	6 0 0	6 2 6
Con Deep Level, g	"	260,000	1 0 0	x all.	June, 1898	1 10 0	1 15 0
Crown Reef, g	"	120,000	1 0 0	10 0	May, 1899	16 15 0	17 10 0
De Beers Con., g	Cape Colony	3,950,000	5 0 0	21	June, 1899	27 17 6	28 2 6
Durban Roodepoort, g	Transvaal	135,000	1 0 0	5	July, 1899	6 2 6	6 7 6
Ferreira, g	"	90,000	1 0 0	30 0	Aug., 1899	23 0 0	23 10 0
*Geldenhuis Deep, g	"	350,000	1 0 0	8 0	Aug., 1899	19 2 6	19 7 6
*Geldenhuis Est., g	"	200,000	1 0 0	4 0	July, 1899	7 5 0	7 7 6
§Ginsberg, g	"	160,000	1 0 0	4 0	Feb., 1899	3 13 9	3 16 3
*Henry Nourse, g	"	125,000	1 0 0	10 0	Aug., 1899	8 2 6	8 7 6
Heriot (New), g	"	115,000	1 0 0	5 0	Aug., 1899	7 2 6	7 7 6
Jagersfontein, d	Orange Fr. St.	1,000,000	5 0 0	9 0	June, 1899	13 15 0	14 0 0
§Johannesburg Con. Invst	So. Africa	2,750,000	1 0 0	2 0	Aug., 1897	1 15 0	1 17 6
Jubilee, g	Transvaal	50,000	1 0 0	5 0	Aug., 1899	6 12 6	6 17 6
*Jumpers, g	"	100,000	1 0 0	5 0	Aug., 1899	5 12 6	6 17 6
Kleinfontein, g	"	275,000	1 0 0	2 0	Mar., 1899	2 16 3	2 18 9
Langlaagte Estate, g	"	500,000	1 0 0	3 0	June, 1899	3 7 6	3 12 6
*May Con., g	"	275,000	1 0 0	6 0	Aug., 1899	5 8 9	5 6 3
Meyer & Charlton, g	"	85,000	1 0 0	8 0	July, 1899	6 0 0	6 5 0
Namaqua, c	Cape Colony	200,000	1 0 0	6 6	June, 1899	3 17 6	4 2 6
§Primrose (New), g	Transvaal	300,000	1 0 0	6 0	Feb., 1899	4 11 3	4 13 9
*Rand Mines, g	So. Africa	400,000	1 0 0	15 0	Aug., 1899	39 2 6	39 7 6
*Robinson, g	Transvaal	2,750,000	5 0 0	8 0	Aug., 1899	10 0 0	10 5 0
Sheba, g	"	1,100,000	1 0 0	0 6	July, 1898	1 1 3	1 3 9
Sim. & Jack Prop., g	"	5,000,000	5 0 0	4 0	July, 1899	5 8 9	6 11 3
Wemmer, g	"	80,000	1 0 0	15 0	June, 1899	13 15 0	14 5 0
Wolhuter, g	"	860,000	4 0 0	2 0	Feb., 1899	4 17 6	5 0 0
§Worcester, g	"	100,000	1 0 0	3 0	July, 1899	2 17 6	3 2 6

§ Dividend pending. * Ex dividend. † Ex-rights.

MEETINGS.

NAME OF COMPANY.	Location.	Meeting.	Date.	Place of Meeting.
Butte & Boston	Montana	Annual	Oct. 2.	Butte, Mont.
Chrysolite	Colorado	"	Nov. 3.	80 Broadway, New York City.
Con. Cal & Va.	Nevada	"	Oct. 21.	San Francisco, Cal.
Con. G. Gate & Sulph	California	"	Sept. 12.	San Francisco, Cal.
Edwin Booth	Colorado	"	Sept. 30.	142 Curtis st., Denver, Colo.
Fortune	Colorado	"	Sept. 12.	16th & Blake sts., Denver, Colo.
Great Western, q	California	"	Nov. 6.	530 California st., San Francisco, Cal.
Horn Silver	Utah	"	Oct. 5.	Salt Lake City, Utah
Kellogg Creek	California	Special	Sept. 11.	324 Montgomery st., San Francisco, Cal.
Nettie Dutcher	Colorado	"	Sept. 19.	Denver, Colo.
Siskiyou Con	California	Annual	Nov. 4.	306 Pine st, San Francisco, Cal.

ASSESSMENTS.

NAME OF COMPANY.	Location.	¢/$	Dlq.	Sale.	Amt.	OFFICE.
			Aug.			
Cedar Valley	Utah	1	22	Sept. 8	.00½	Atlas Block, Salt Lake City.
Challenge Con	Nev.	27	22	Sept. 12	.10	Mills Bldg., San Francisco, Cal.
Chollar	Nev.	49	24	Sept. 14	.15	Mills Bldg., San Francisco, Cal.
Ely	Utah	2	22	Sept. 11	.01	150 Main st., Salt Lake City.
Geyser	Colo	..	24	Sept. 25	.10	31 Milk st, Boston, Mass.
Homestake	Utah	..	30	Sept. 18	.00½	163 South Main st., Salt Lake City.
Marguerite	Cal	14	28	Sept. 25	.10	237 12th st., San Francisco.
R. G. W	Utah	2	17	Nov. 4	.01	34 W. 2d South st., Salt Lake City.
Sailor Con	Cal.	1	21	Sept. 18	.14	318 Front st., San Francisco.
South Bingham	Utah	..	Sept. 20	Sept. 20	.00½	46½ W. 2d South st., Salt Lake City.
Acorn	Utah	1	23	Oct. 14	.00¼	Wells, Fargo Bank, Salt Lake City.
Alaska	Utah	..	15	Oct. 14	.01½	714 McCornick Bldg., Salt Lake City
Alexandria	S. D.	..	18	Oct. 6	.005	H. H. Armstrong, Jr., Galena, S. D.
Badger Hill & Cherokee	.....	....	27	Oct. 19	3.00	320 Sansome st., San Francisco, Cal.
Central Eureka	Cal.	13	1	Sept. 25	.03	320 Sansome st., San Francisco, Cal.
Con. St. Gothard	Cal.	..	12	.....	.05	.....
Eureka Con. D	Cal.	20	12	Sept. 30	.00½	1,209 Claus Spreckels Bldg., S. Fra'co
Excelsior	Cal.	..	11	.....	.05	.....
Ford	Cal.	..	4	.....	.01	.....
Galena Treasure	S. D.	..	18	Oct. 6	.002	H. H. Armstrong, Jr., Galena, S. D.
Humboldt	Cal.	..	11	.....	.02	.....
International	Utah	..	5	Sept. 25	.01	117 S. W. Temple st., Salt Lake City.
Kate Hayes	Cal.	7	26	Oct. 18	.00½	320 Sansome st., San Francisco, Cal.
La Suerte	Cal.	..	8	.....	.22	.....
Little Chief	Utah	1	9	Sept. 26	.01	161 South Main st., Salt Lake City.
Live Yankee	Cal.	..	9	.....	.01	Grainteville, Cal.
Madge	S. D.	..	18	Oct. 6	.002	H. H. Armstrong, Jr., Galena, S. D.
Mariposa C'l & Mg	Cal	12	5	Sept. 29	10.00	320 Sansome st., San Francisco.
Meteor	Utah	..	5	Oct. 10	.00½	304 Dooly Bldg., Salt Lake City.
National Con	Cal.	8	18	Oct. 11	.10	773 Mission st., San Francisco.
New Klondike	Utah	..	12	Sept. 28	.00½	310 McCornick Block, Salt Lake City
Occidental Con	Nev.	33	5	Sept. 28	.05	309 Montgomery st., San Francisco.
Old Home	Cal.	..	11	.....	.01	.....
Orleans	Cal.	9	8	Oct. 3	.05	324 Pine st., San Francisco.
Overman	Nev.	3	22	Oct. 13	.05	414 California st., San Francisco.
Potosi	Nev.	53	14	Oct. 5	.15	309 Montgomery st., San Francisco.
Powning	Cal.	..	12	.....	.00¼	.....
Savage	Nev.	98	6	Sept. 26	.10	309 Montgomery st., San Francisco.
Tetro	Utah	9	16	Oct. 7	.01	617 McCornick Block, Salt Lake City
Union Con	Nev.	58	6	Sept. 25	.15	309 Montgomery st., San Francisco.
Utah Con	Nev.	31	7	Sept. 28	.05	309 Montgomery st., San Francisco.
Willow Creek	S. D.	..	7	Sept. 22	.01	Le Mars, Iowa.

DIVIDENDS.

NAME OF CO.	Date.	Am't.	Paid 1899.	Grand Total.
Alamo, Utah	.....	.....	$2,500	$2,500
Alaska-Mexican	.....	.....	54,000	411,031
Alaska-Treadwell	.....	.....	225,000	4,145,000
Ætna Con	.....	.....	30,000	180,000
American Coal	Sept.1	$75,000	150,000	727,500
American Gold	.....	.....	48,000	434,000
Am. Zinc-L. & Sm.	.....	.....	20,000	20,000
Anaconda Copper	.....	.....	1,500,000	9,750,000
Anchoria-Loland	.....	.....	54,000	216,000
Apollo Con., Alas	.....	.....	40,000	140,000
April Fool, Nev	.....	.....	6,000	6,000
Argonaut, Cal	.....	.....	163,000	340,000
Associated, Colo	.....	.....	12,000	84,000
Aurora Iron	.....	.....	50,000	800,000
Bald, Butte	.....	.....	75,000	724,648
Bonanza, Wash	.....	.....	2,500	2,500
Bona'za Dev., N.M	.....	.....	1,050,000	1,500,000
Boston-Aurora	.....	.....	10,656	10,656
Boston-Duenweg, z	.....	.....	16,000	16,000
Boston-Little C. Zn	Sept.1	10,000	40,000	40,000
Boston Provid'nce	Sept.4	750	9,000	9,000
Boston & Cal	.....	.....	72,000	72,000
Boston & Mont	.....	.....	3,150,000	12,275,000
Breece	Sept.1	10,000	30,000	60,000
Bul. Bec. & Champ	.....	.....	80,000	2,398,400
Bunker Hill & S	.....	.....	105,000	705,000
Calumet & Hecla	Sep.29	2,000,000	8,000,000	64,850,000
Cariboo-M'Kinney	.....	.....	75,000	311,965
Centenn'l Eureka	.....	.....	120,000	2,150,000
Central Lead	.....	.....	40,000	122,000
Charleston, S. C	.....	.....	20,000	200,000
Colorado Sm	.....	.....	100,000	1,945,000
Colonial Lead, Mo	.....	.....	10,000	10,000
Consolidation Coal	.....	.....	205,000	5,716,650
D'Tr'l No. 2 Wash	.....	.....	20,000	37,500
Doe Run, Mo	.....	.....	20,000	89,000
De Lamar, Idaho	.....	.....	48,000	2,346,000
El Dorado, Cal	.....	.....	10,000	10,000
Elkton, Colo	Sep.15	37,500	37,500	694,461
Empire State, Ida	Sep.15	24,628	167,473	229,378
Fanny Rawlings	.....	.....	20,000	20,000
Ferris-Hagty, Wyo	.....	.....	5,000	5,000
Garfield Con	.....	.....	12,000	34,000
Gold Coin, Vict	.....	.....	$80,000	$230,000
Golden Cycle	.....	.....	65,000	218,500
Golden Eagle, Col	.....	.....	5,000	5,000
Gold King, Col	.....	.....	60,000	60,000
Golden M. & Ex	.....	.....	10,000	10,000
Golden Star, Ont	.....	.....	41,000	41,000
Grand Central, Ut	Sept.1	$60,000	347,500	666,250
Grass Valley Ex	.....	.....	22,500	22,500
Gwin, Cal	Sept.8	5,000	35,000	86,500
Helena & Frisco	.....	.....	125,000	550,000
Hidden Treas., Cal	.....	.....	3,600	3,600
High Five, Colo	.....	.....	10,000	10,000
Holy Terror	.....	.....	25,000	142,000
Homestake	.....	.....	542,500	7,723,750
Horn Silver	.....	.....	40,000	5,270,000
Idaho, B. C	.....	.....	28,000	292,000
Isabella	.....	.....	150,000	450,000
Jack Pot	.....	.....	25,000	25,000
Jamison, Cal	.....	.....	11,700	50,700
Ky. L. C. & Mfg	.....	.....	10,380	164,041
Lake Superior Ir	.....	.....	84,000	227,860
Last Chance, B. C	.....	.....	25,000	45,000
Lillie	Sept.1	11,250	101,250	267,860
Mammoth	Sept.1	60,000	180,000	1,530,000
Marion Con., Colo	.....	.....	5,000	300,000
Mead, Cal	.....	.....	40,000	120,000
Mercur	.....	.....	50,000	1,291,000
Mo. Zinc Fields, pfd	Sept12	2,664	13,320	13,320
Modoc	Sept15	10,000	90,000	170,000
Montana, Ltd	.....	.....	98,855	453,700
Mont. Ore Pur	Sept27	80,000	480,000	1,280,000
Morning Star, Cal	.....	.....	49,200	737,400
Moulton, Mont	.....	.....	20,000	480,000
Mt. Shasta, Cal	.....	.....	6,000	6,000
Napa Con	.....	.....	60,000	1,010,000
New Central Coal	.....	.....	20,000	470,000
New Idria	.....	.....	60,000	140,000
N.Y. & H.-Rosario	Sep.20	15,000	120,000	1,110,000
North Star, Cal	.....	.....	50,000	530,000
Olive	.....	.....	12,000	12,000
Orig. Empire, Cal	.....	.....	50,000	500,000
Osceola	.....	.....	279,000	2,801,500
Parrot	.....	.....	552,000	2,690,898
Pennsylvania Cal	.....	.....	$36,050	$95,275
Pennsylvania Coal	.....	.....	890,000	14,050,000
Petro, Utah	.....	.....	5,000	22,500
Pioneer, Cal	.....	.....	12,500	62,500
Portland	Sep.15	$60,000	540,000	2,377,080
Queen Bess, B. Col.	.....	.....	12,150	12,150
Quicksilver (Pref.)	.....	.....	21,500	1,845,411
Quincy	.....	.....	950,000	11,670,000
Rambler Cariboo	.....	.....	10,000	50,000
Raven, Colo	Sep 20	10,000	10,000	29,500
Republic, Wash	Sept15	31,500	157,500	343,000
Royal, B. C	.....	.....	50,000	1,050,000
Sacramento	Sept.1	5,000	45,000	133,000
St. Joseph Lead	.....	.....	75,000	2,859,500
Silver King	.....	.....	375,000	2,200,000
Small Hopes	.....	.....	25,000	3,325,000
Smuggler	.....	.....	80,000	1,175,000
South Swansea	Sept.5	7,500	37,500	150,000
Standard, Cal	.....	.....	40,000	3,879,226
Standard, Ida	.....	.....	30,000	1,745,000
Swansea	Sept.9	5,000	45,000	236,000
Tamarack	.....	.....	240,000	5,910,000
Tomboy	.....	.....	80,000	730,000
T. F. T., Colo	Sept.1	35,000	35,000	35,000
United Z. & L., pfd	.....	.....	20,000	20,000
Utah, Utah	.....	.....	2,000	179,000
Vindicator	.....	.....	126,875	253,750
War Eagle, B. C.	Sept15	26,250	236,250	414,000
Weatherly Bonanza, Wash	.....	.....	1,562	1,562
Wolverine	Oct. 2	120,000	210,000	270,000
Yellow Aster	Sept.9	20,000	85,000	253,789
Grand Total	.....	.....	$2,722,042	$23,240,416	199,920,420

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.			Dividends. Total Paid.	Dividends. Date and Amount of Last.		
1	Etna Cons., q	Cal	$500,000	100,000	$5	*				$180,000	July	1899	.10
2	Alaska-Mexican, g	Alask	1,000,000	200,000	5					411,031	July	1899	.10
3	Alaska-Treadwell, g	Alask	5,000,000	200,000	25	*				4,145,000	July	1899	.37½
4	Alamo, g. c. i	Utah	125,000	125,000	1	$937	Mar.	1898	.00¼	2,500	April	1899	.02
5	Alice, g. s	Mont	10,000,000	400,000	25	*				1,075,000	April	1898	.05
6	American Coal	Md	1,500,000	60,000	25					727,500	Sept.	1899	1.25
7	American Gold, g. s. c. l	Colo.	3,000,000	300,000	10	*				434,000	June	1899	.09
8	Am. Zinc, Lead & Sm	Mo	500,000	200,000	25					20,000	July	1899	.10
9	Anaconda Copper	Mont	30,000,000	1,200,000	25					9,750,000	May	1899	1.25
10	Anchoria-Leland, g	Colo.	600,000	600,000	1	*				198,000	April	1899	.03
11	Appie Ellen, g	Colo.	600,000	600,000	1					25,000	Aug	1898	.01
12	April Fool	Nev	500,000	500,000	1					6,000	Aug	1899	.01
13	Argonaut	Cal	2,000,000	200,000	10					340,000	Aug	1899	.10
14	Associated, g	Colo.	1,250,000	1,250,000	1	*				84,000	Feb	1899	.01
15	Atlantic, c	Mich.	1,000,000	40,000	25					780,000	Feb	1898	1.00
16	Aurora, i	Mich.	2,500,000	100,000	25	*				890,000	June	1899	.50
17	Bald Butte	Mont.	250,000	250,000	1	*				724,648	July	1899	.06
18	Big Six, g. s	Colo.	500,000	500,000	1					15,000	May	1898	.00½
19	Bonanza, Dev	NMex	3,000,000	300,000	10					1,500,000	June	1899	3.50
20	Boston-Aurora, pref	Mo	800,000	32,000	25					10,656	Aug	1899	.17
21	Boston & Californin	Cal	600,000	600,000	1					72,000	June	1899	.06
22	Boston-Little Circle, g	Mo-K	1,000,000	100,000	10	*				30,000	Aug	1899	.10
23	Boston & Mont. Con	Mont	3,750,000	150,000	25	*				12,275,000	Aug	1899	10.00
24	Breece, i	Colo.	5,000,000	200,000	25					60,000	Sept.	1899	.05
25	Bullion-Beck & Champ	Utah	1,000,000	100,000	10	*				2,398,400	Aug	1899	.10
26	Bunker Hill & S., s. l	Idaho	3,000,000	300,000	10					705,000	May	1899	.07
27	Calumet & Hecla, c	Mich.	2,500,000	100,000	25					62,850,000	June	1899	20.00
28	Centen l-Eureka, g. s. l. c	Utah	1,500,000	30,000	50	30,000	Mar.	1889	1.00	2,150,000	Aug	1899	.50
29	Central Lead, l	Mo	1,000,000	10,000	100	*				122,000	Aug	1899	.50
30	Champion, g. s	Cal	340,000	34,000	10					296,200	April	1898	.25
31	Charleston, p. r	S. C.	1,000,000	10,000	100	*				200,000	June	1899	2.00
32	Consolidation Coal	Md	10,250,000	102,500	100					5,716,650	Feb	1899	2.00
33	Con. Tiger & Poorman	Idaho	1,000,000	1,000,000	1	*				20,000	Dec	1898	.02
34	Cresus, g	Cal	1,000,000	200,000	5					30,000	Dec	1898	.15
35	Crowned King, g. s. l	Ariz	6,000,000	600,000	10	*				232,000	Dec	1898	.02
36	Deadwood-Terra, g	S. D.	5,000,000	200,000	25	*				1,350,000	May	1898	.15
37	De Lamar, g. s	Idaho	2,000,000	400,000	5					2,846,000	May	1899	.12
38	Deer Trail No. 2	Wash	1,000,000	1,000,000	1					37,500	Aug	1899	.00¼
39	Doe Run, l	Mo	500,000	5,000	100					80,000	Aug	1899	.50
40	Elkton Cons., g	Colo.	1,250,000	1,250,000	1					656,961	Nov	1899	.01½
41	El Paso, g. s	Colo.	650,000	650,000	1					12,393	Jan	1898	.01
42	Empire State-Idaho	Idaho	1,000,000	100,000	10					204,747	Aug	1899	.20
43	Enterprise, s. l	Colo.	500,000	500,000	1					900,000	Sept.	1898	.05
44	Fanny Rawlings, g. s	Colo.	1,000,000	1,000,000	1					20,000	Aug	1899	.01
45	Ferris-Haggarty, c.g.s	Wyo.	1,000,000	1,000,000	1					5,000	Mar	1899	.00½
46	Garfield Con., g	Colo.	1,200,000	1,200,000	1					34,000	May	1899	.01
47	Geyser-Marion, g	Utah	1,500,000	300,000	5					96,000	Sept.	1898	.02
48	Gold Coin of Victor, g	Colo.	1,000,000	1,000,000	1					230,000	ug	1899	.01
49	Golden Cycle, g	Colo.	1,000,000	200,000	5					218,500	Aug	1899	.05
50	Gold King, g	Colo.	1,000,000	1,000,000	1					60,000	July	1899	.03
51	Goldea Eagle, g	Co o.	500,000	500,000	1					5,000	July	1899	.01
52	Golden Reward, g	S. D.	1,000,000	100,000	10					155,000	Feb	1898	.15
53	Golden Star	Ont	100,000	100,000	1					41,000	July	1899	.01
54	Grand Central, g	Utah	250,000	250,000	1					606,250	Aug	1899	.15
55	Grass Valley Expl	Cal	100,000	30,000	2	*				22,500	July	1899	.25
56	Gwin, g	Cal	1,000,000	20,000	50	286,000	Jan.	1898		81,500	Aug	1899	.25
57	Helena & Frisco, l. s	Idaho	2,500,000	500,000	5	*				550,000	June	1899	.25
58	Holy Terror, g	S. D.	500,000	500 000	1					142,000	July	1899	.01
59	Homestake, g	S. D.	21,000,000	210,000	100	200,000	July	1878	1.00	7,723,750	Aug	1899	.50
60	Hope of St. Louis, s	Mont.	1,000,000	100,000	10	*				762,252	Mar	1898	.10
61	Horn-Silver, g. s. c. sp. l	Utah	10,000,000	400,000	25	*				5,279,000	July	1899	.05
62	Iowa, g	Colo.	1,000,000	1,000,000	1					95,000	June	1898	.00½
63	Iron Mountain, g. s. l	Mont.	5,000,000	500,000	10	*				507,500	April	1898	.02
64	Isabella, g	Colo.	2,250,000	2,250,000	1					448,500	June	1899	.02
65	Jack Pot, g	Colo.	1,250,000	1,250,000	1					25,000	Mar	1899	.02½
66	Jamison	Cal	3,900,000	390,000	10	144,000	Nov	1896	.17	50,700	April	1899	.10
67	Jersey Leasing	Colo.	200,000	158,167	1					137,875	Oct	1898	.03½
68	Lake Superior Iron	Mich.	2,100,000	84,000	25					736,000	Feb	1899	1.00
69	Lillie, g	Colo.	1,250,000	250,000	5					256,610	Aug	1899	.05
70	Mammoth, g. s. c	Utah	10,000,000	400,000	25	*				1,470,000	Aug	1899	.10
71	Matoa, g	Colo.	1,000,000	1,000,000	1					25,000	Dec	1898	.02½
72	Mead, g	Cal	200,000	200,000	1					120,000	June	1899	.20
73	Mercur, g	Utah	5,000,000	200,000	25	*				1,291,000	July	1899	12½
74	Minnesota Iron	Minn	16,500,000	165,000	100	*				4,735,000	Oct	1898	1.50
75	Missouri Zinc Fields, pf	Mo	400,000	16,000	25					7,932	Aug	1899	.17
76	Modoc, g	Colo.	500,000	500,000	1					160,000	Aug	1899	.02
77	Montana, Ltd., g. s	Mont.	3,300,000	657,128	5	*				453,700	April	1899	.12
78	Montana Ore Purchas'g	Mont.	2,500,000	80,000	25	*				1,200,000	July	1899	1.00
79	Moon-Anchor Con,, g	Colo.	1,750,000	600,000	1					261,000	Nov	1898	.07½
80	Morning Star, g	Cal	240,000	2,400	100	70,800	Feb	1885	.75	737,490	Aug	1899	2.00
81	Monument	Colo.	300,000	300,000	1					12,624	Dec	1898	.01
82	Mt. Rosa, g	Colo.	1,000,000	1,000,000	1					60,000	Jan	1898	.02
83	Mt. Shasta	Cal	100,000	20,000	5					6,000	May	1899	.30
84	Moulton	Mont	2,000,000	400,000	5					480,000	Feb	1899	.05
85	Mountain Copper	Cal	5,250,000	250,000	25					93,750	Sept.	1898	.62½
86	Napa Cons., q	Cal	700,000	100,000	7	*				1,010,000	July	1899	.20
87	New Central Coal	Md	1,000,000	50,000	20					470,000	April	1899	.40
88	New Idria, q	Cal	500,000	100,000	5					140,000	July	1899	.20
89	N. Y. & Hon Rosario, s. g	C. A.	1,500,000	150,000	10	*				1,095,000	Aug	1899	.10
90	North Star, g	Cal	5,000,000	500,000	10	20,000	June	1885	.02	550,000	April	1899	.25
91	Nugget	Colo.	1,000,000	1,000,000	1					20,000	Aug	1898	.00½
92	Orphan Bell, g	Colo.	1,000,000	1,000,000	1					115,000	Mar	1898	.01
93	Original Empire, g	Cal	5,000,000	50,000	100	92,500	Aug	1896	1.25	500,000	May	1899	1.00
94	Osceola, c	Mich.	2,500,000	93,000	25	*				2,801,500	June	1899	3.00
95	Parrot, c	Mont.	2,300,000	230,000	10	*				2,690,898	May	1899	1.50
96	Pennsylvania Coal	Pa	5,000,000	100,000	50					14,050,000	May	1899	8.00
97	Pennsylvania Cons	Cal	5,150,000	51,500	100	50,051	Feb	1892	.05	95,275	Aug	1899	.20
98	Petro, g	Utah	1,000,000	200,000	5					5,000	July	1899	.02½
99	Pioneer g	Cal	1,000,000	100,000	10					62,500	Mar	1899	.12½
100	Portland, g	Colo.	3,000,000	3,000,000	1	*				2,317,080	Aug	1899	.02
101	Quicksilver, pref	Cal	4,300,000	43,000	100					1,845,411	May	1899	.50
102	Quicksilver, com	Cal	5,700,000	57,000	100					643,867	July	1882	.40
103	Quincy, c	Mich.	2,500,000	100,000	25	*				11,070,000	Aug	1899	6.00
104	Raven, g	Colo.	1,500,000	1,500,000	1					19,500	Mar	1898	.01
105	Republic Cons., g	Wash	3,500,000	3,150,000	1					391,500	Aug	1899	.01
106	Royal Con., g	B. C.	2,500,000	2,500,000	1					1,050,000	June	1899	.01
107	Sacramento, g	Utah	5,000,000	1,000,000	5					128,000	Aug	1899	.00½
108	St. Joseph, l	Mo	3,000,000	300,000	10	*				2,859,500	June	1899	.50
109	Santa Rosalia, g. s	Cal	100,000	100,000	1					125,000	Feb	1898	1.10
110	Silver King, g. s. l	Utah	3,000,000	150,000	20	3,000	Jan	1897	.02	2,200,000	Aug	1899	.25
111	Small Hopes, s	Colo.	5,000,000	250,000	20	*				3,325,000	Feb	1899	.10
112	Smuggler, s. l. z	Colo.	1,000,000	1,000,000	1					1,175,000	Aug	1899	.01
113	South Swansea, s. l	Utah	150,000	150,000	1					142,500	Aug	1899	.05
114	Standard Cons., g. s	Cal	2,000,000	200,000	10	99,888	June	1890	.50	3,879,226	Aug	1899	.10
115	Standard	Idaho	500,000	500,000	1					1,745,000	April	1899	.06
116	Swansea, s. l	Utah	500,000	100,000	5					231,000	Aug	1899	.05
117	Tamarack, c	Mich.	1,500,000	60,000	25					5,910,000	June	1899	4.00
118	Tomboy, g	Colo.	2,000,000	200,000	10					730,000	May	1899	4.00
119	United, z. l., pref	Mo	1,000,000	40,000	25	*				20,000	July	1899	.50
120	Utah	Utah	1,000,000	100,000	10	*				179,000	Jan	1899	.02
121	Victor, g	Colo.	1,000,000	200,000	5	*				1,155,000	Dec	1898	.50
122	Vindicator, Cons. g	Colo.	1,500,000	1,015,000	1					253,750	July	1899	.05
123	War Eagle, Cons	B. C.	2,000,000	1,750,000	1					387,750	Aug	1899	.01½
124	Wolverine, c	Mich.	1,500,000	60,000	25	180,000	Mar	1895	1.00	270,000	Oct	1899	1.50
125	Yellow Aster, g	Cal	1,000,000	100,000	10	*				283,789	July	1899	.10

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.		
1	Ada Cons., s. l	Utah	$100,000	100,000	$1	$3,333	Nov	1895	.01½
2	Alliance, g. s. l	Utah	150,000	150,000	1	200,000	Dec	1895	.10
3	Allouez, c	Mich.	2,500,000	100,000	25	1,520,937	June	1894	1.00
4	Alpha Cons., g. s	Nev	105,000	105,000	1	319,200	Aug	1899	.03
5	Alta, s	Nev	216,000	108,000	2	3,625,710	June	1899	.05
6	Alta	Utah	750,000	750,000	1	938	Mar	1899	.00¼
7	American Quartz, g	Cal	1,000,000	100,000	10	1,000	Feb	1897	.01
8	Anchor, g. s. l	Utah	1,500,000	150,000	10	560,000	Aug	1893	.20
9	Andes, g	Nev	300,000	100,000	3	1,305,000	June	1899	.05
10	Arnold, c	Mich.	1,500,000	60,000	25	180,000	Jan	1899	3.00
11	Baliol, g	Cal	1,000,000	100,000	10	55,000	Mar	1898	.30
12	Belcher, s. g	Nev	312,000	104,000	3	3,585,600	Aug	1899	.10
13	Belle Isle	Nev	10,000,000	100,000	100	240,271	July	1896	.16
14	Benton Con. s	Nev	10,800,000	108,000	100	587,023	June	1897	.25
15	Best & Belcher, g. s	Nev	302,400	100,800	3	2,609,803	Aug	1899	.10
16	Bogan	Utah	1,250,000	125,000	10	26,875	Dec	1897	.01½
17	Boston & Cp. Ck., g	Colo.	400,000	200,000	2	20,000	Aug	1898	.10
18	Brunswick Cons., g	Cal	500,000	500,000	1	160,000	July	1897	.03
19	Bullion, s. g	Nev	100,000	100,000	1	3,125,000	May	1899	.05
20	Caledonia	Nev	300,000	300,000	3	3,210,000	Nov	1897	.10
21	Centennial, c	Mich.	2,500,000	100,000	25	460,000	Mar	1898	3.00
22	Central Eureka, g	Cal	4,000,000	400,000	10	135,942	Sept.	1899	.03
23	Challenge Cons, s, g	Nev	150,000	50,000	3	438,000	Aug	1899	.10
24	Chollar, g. s	Nev	336,000	112,000	3	2,076 600	Aug	1899	.15
25	Confidence, g. s	Nev	74,880	24,960	3	545,118	May	1899	.20
26	Con., Cal. & Va	Nev	540,000	216,000	2½	734,000	May	1899	.25
27	Cons. Imperial, g. s	Nev	500,000	500,000	1	2,251,000	July	1899	.01
28	Con. New York	Nev	100,000	100,000	1	160,500	Nov	1898	.03
29	Crown Point, g. s	Nev	300,000	100,000	3	2,980,000	May	1899	.10
30	Dalton, s. l	Utah	2,500,000	500,000	5	58,750	April	1899	.01
31	Dexter	Nev	1,000,000	200,000	5	38,000	Apr	1898	.15
32	Diamond Con	Utah	1,000,000	200,000	5	8,000	Mar	1899	.04
33	Eagle, g. s	Cal	500,000	100,000	5	5,000	Dec	1896	.05
34	Eagle, g. s	Ore	1,000,000	100,000	10	6,000	Oct	1898	.01½
35	Emerald	Utah	300,000	300,000	1	3,000	Oct	1898	.00½
36	Eureka Cons., g. s. l	Nev	1,000,000	50,000	20	585,000	Sept.	1898	.20
37	Eureka Con. Drift, g	Cal	500,000	500,000	1	182,500	Sept.	1899	.00½
38	Exchequer, g. s	Nev	1,000,000	100,000	1	1,020,000	Dec	1897	.05
39	Florence	Utah	1,000,000	200,000	5	1,000	June	1899	.00¼
40	Four Aces	Utah	250,000	250,000	1	5,000	Mar	1898	.01
41	Galena	Utah	1,000,000	100,000	10	10,000	Oct	1898	.10
42	Geyser, s. l	Colo.	5,000,000	500,000	10	1,225,000	July	1899	.10
43	Gold Belt, g. s	Utah	500,000	500,000	1	3,012	July	1896	.00½
44	Gold Coin	Colo.	1,000,000	200,000	5	10,000	Mar	1899	.05
45	Golden Eagle, g	Nev	400,000	400,000	1	4,000	April	1899	.01
46	Golden Fleece Grav. g	Cal	130,000	130	1000	56,260	Mar	1897	2.00
47	Gold & Silver Carb	Utah	500,000	500,000	1	2,500	Mar	1899	.00½
48	Gould & Curry	Nev	324,000	108,000	5	4,625,150	July	1899	.10
49	Granite Hill, g. s	Cal	500,000	100,000	5	124,000	June	1899	.03
50	Great Eastern, g	Utah	1,500,000	300,000	5	6,500	July	1899	.00½
51	Great Western, q	Cal	5,000,000	50,000	100	75,520	May	1899	.15
52	Hale & Norcross, g. s	Nev	11,200,000	112,000	100	5,716,280	May	1899	.10
53	Head Center Con., s. g	Ariz	5,000,000	200,000	25	25,125	Mar	1899	.20
54	Horse Shoe Bar Cons	Cal	6,000,000	60,000	100	85,800	Jan	1899	.05
55	Joe Bowers, Ext. g	Utah	112,000	450,000	¼	9,000	July	1899	.01
56	Julia Con	Nev	110,000	110,000	1	1,498,800	Jan	1899	.03
57	Jupiter, g	Cal	2,000,000	20,000	100	80,000	Feb	1898	.20
58	Justice, g. s. c	Nev	210,000	105,000	2	3,662,500	Aug	1899	.10
59	Kentuck	Utah	600,000	300,000	2	30,000	Aug	1898	.10
60	Kentuck Cons., s	Nev	105,000	105,000	1	125,300	June	1898	.05
61	Lacrosse, g	Colo.	1,000,000	100,000	10	*			
62	Little Pittsburg	Utah	2,000,000	400,000	5	21,000	June	1899	.00¾
63	Lower Mammoth	Utah	150,000	150,000	1	22,500	June	1899	.05
64	Lucky Bill	Utah	300,000	120,000	2.50	56,400	June	1898	.01½
65	Marguerite, g	Cal	500,000	50,000	10	85,000	Aug	1899	.10
66	Marina Marsicano, g	Cal	1,000,000	100,000	10	49,360	June	1899	.05
67	May Day	Utah	100,000	400,000	¼	4,000	Jan	1899	.00½
68	Maydav, g. s	Cal	50,000	50,000	1	10,000	July	1899	.10
69	Mayflower, g	Cal	1,200,000	60,000	20	6,000	Sept.	1898	.05
70	Merced, g	Cal	2,250,000	150,000	15	200,000	July	1896	2.00
71	Meteor, s. l	Utah	600,000	300,000	2	9,734	Sept.	1899	.01
72	Mexican, g. s	Nev	302,400	100,809	3	2,268,800	June	1899	.10
73	Montreal	Utah	2,500,000	250,000	10	30,625	April	1899	.05
74	Mt. Diablo s	Nev	5,000,000	50,000	100	150,000	Dec	1898	.10
75	Morning Star, s	Nev	1,500,000	150,000	10	32,500	Dec	1898	.00½
76	Nashville, g	Cal	115,000	11,500	10	2,000	Sept.	1898	.17
77	North Banner, g. s	Cal	1,000,000	100,000	10	21,794	Oct	1896	.02
78	North Belle Isle, s	Nev	10,000,000	100,000	100	523,074	July	1896	.10
79	No. Gould & Curry	Nev	100,000	100,000	1	375,000	Dec	1898	.10
80	Northern Light, g	Utah	2,000,000	400,000	5	80,000	July	1898	.10
81	Occidental Cons g s	Nev	300,000	100,000	3	514,178	Sept.	1899	.05
82	Ophir, g. s	Nev	324,000	108,000	3	4,635,960	Aug	1899	.15
83	Opohonga	Utah	200,000	200,000	2	1,500	June	1898	.01
84	Ore Cache, g. s	S. D.	1,250,000	250,000	5	6,250	July	1893	.00½
85	Osceola, g	Cal	10,000,000	100,000	100	10,924	Sept.	1898	.01
86	Overman, g. s	Nev	230,400	115,200	2	4,135,450	Mar	1899	.05
87	Peer, s	Ariz	10,000,000	100,000	100	215,000	July	1894	.05
88	Peerless, s	Nev	10,000,000	100,000	100	410,000	July	1894	.05
89	Pine Hill, g	Cal	1,000,000	100,000	10	30,000	July	1897	.05
90	Potosi, g. s	Nev	336,000	112,000	3	2,185,200	Sept.	1899	.15
91	Red Mountain, s	Colo.	300,000	60,000	5	22,500	Mar	1891	.12½
92	Rescue, g	Nev	100,000	10,000	10	5,500	Feb	1899	.05
93	Reward, g	Cal	64,000	64,000	1	63,680	Nov	1898	.02
94	Ridge, c	Mich.	500,000	20,000	25	239,939	Feb	1897	1.00
95	St. Mary, c	Mich.	1,000,000	40,000	25	4,000	July	1895	.05
96	Savage, g. s	Nev	280,000	112,000	2½	7,321,000	Sept.	1899	.10
97	Scorpion, s	Nev	100,000	100,000	1	445,000	Dec	1897	.05
98	Seg. Belcher & M g s	Nev	200,000	100,000	2	373,000	June	1899	.05
99	Sevier, g. s	Utah	1,250,000	250,000	5	50,000	April	1897	.04
100	Shower Con	Utah	2,000,000	400,000	5	8,000	Aug	1899	.02
101	Sierra-Nevada, g. s	Nev	300,000	100,000	3	6,721,910	Aug	1899	.15
102	Silver Hill, s	Nev	108,000	108,000	1	2,220,200	May	1898	.05
103	Silver King, s	Ariz	10,000,000	100,000	100	490,000	Aug	1899	.25
104	Silver Queen, c	Ariz	5,000,000	200,000	25	*			
105	Silver State, g	Colo.	700,000	700,000	1	*			
106	Silver State, s. g. l	Utah	100,000	100,000	1	1,000	Sept.	1897	.00½
107	Siskiyou Con., s	Cal	2,000,000	200,000	10	46,000	April	1898	.01
108	Snow Flake	Utah	500,000	100,000	5	51,000	July	1899	.02
109	South Fork Con	Utah	50,000	50,000	1	5,000	Mar	1898	.01
110	South Side	Mich.	1,000,000	40,000	25	4,000	Jan	1899	.10
111	Star, g. s	Utah	1,000,000	200,000	5	7,000	Feb	1899	.03
112	Success	Utah	30,000	300,000	0.10	6,750	July	1899	.01
113	Sunbeam Cons	Utah	250,000	250,000	1	48,125	July	1899	.06
114	Tecumseh, c	Mich.	1,000,000	40,000	25	40,000	July	1897	1.00
115	Temonj, g	Colo.	1,000,000	1,000,000	1				
116	Tetro	Utah	300,000	300,000	1	30,000	Sept.	1899	.01
117	Triumph	Utah	1,000,000	100,000	10	1,000	April	1899	.01
118	Union Cons., g. s	Nev	250,000	100,000	2½	2,648,000	Sept.	1899	.15
119	Utah Cons., s	Nev	100,000	100,000	1	485,000	Sept.	1899	.05
120	Valeo	Utah	200,000	200,000	1	10,000	May	1899	.05
121	Victory, g. s	S. D.	1,250,000	250,000	5	2,625	Nov	1899	.00½
122	Watt Blue Gravel, g	Cal	1,100,000	100,000	10	58,000	May	1899	.03
123	Work, g	Colo.	1,250,000	1,250,000	1				
124	Yankee Girl	Utah	250,000	250,000	1	5,000	April	1899	.02
125	Yellow Jacket, g. s	Nev	350,000	120,000	3	5,305,000	April	1899	.15
126	Yellow Jacket	Utah	300,000	300,000	1	1,500	Dec	1897	.00½

G., Gold. S., Silver. L., Lead. C., Copper. B., Borax. * Non-assessable. This table is corrected up to August 21. Correspondents are requested to forward changes or additions.

CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT PRICES.

	Cust. Meas.	Price.
Abrasives—		
Carborundum, f.o.b.		
Niagara Falls grains..	lb.	$0.10
Powd., F. FF. FFF..	"	.08
Minute No. 1	"	.15
No. 15	"	1.00
Corundum, N. C.	"	.07@.10
Chester	"	.04½@.05
Emery, Turkish flour	"	.08
Grains	"	.05
Naxos flour	"	.03
Grains	"	.05
Chester flour	"	.03
Grains	"	.05
Peekskill flour	"	.01¾
Grains	"	.02¼
Crude, Kuluk, best	lg. ton	18.50
Levant, "	"	22.00
Naxos (Greek) best	"	32.00
Pumice Stone, Am. powd.	lb.	.01½@.02
Italian, powdered	"	.01¼
Lump, per quality	"	.04@.40
Rottenstone, ground	"	.02¼@.03
Lump, per quality	"	.05@.14
Rouge	"	.17@.30
Tripoli, prepared	sh. ton.	20.00
Acids—Acetic, 30% pure	lb.	.03¾
30% ch. pure	"	.06½
80% pure	"	.09
Benzoic, English	oz.	.09@.09½
German	lb.	.46@.47
Boracic, pure cryst	"	.11¼
Powdered	"	.11½@.11¾
Carbolic, cryst. in drums	"	.14½@.15½
Carbonic, liquid	"	.15
Chromic, crude	"	.23
Chem. pure	"	.50
Absol. ch. pure	"	1.75
Hydrochloric, ch. pure	"	.08
Hydrofluoric, 30%	"	.03@.04½
48%	"	.05@.06
Best	"	.25
Nitric, chem. pure	"	.10
Sulphuric, 98%	"	.02
Chem. pure	"	.07
Tartaric, cryst	"	.32
Powder	"	.32½
Alcohol—Grain	gal.	2.42@2.44
Refined wood, 95@97%	"	.75@.80
Purified	"	1.20@1.50
Alum—Lump	100 lbs.	1.65
Powdered	"	2.50
Ground	"	1.75
Chrome, com'l	"	3.50
Aluminum—		
Nitrate	lb.	1.50
Oxide, com'l, common	"	.06½
Best	"	.20
Pure	"	.80
Hydrated	"	.05
Sulphate, pure	"	.02
Com'l	"	1.25
Ammonia—Aqua, 16°	"	.04
18°	"	.04½@.05½
20°	"	.05@.06
26°	"	.07@.08
Ammonium—Bromide, p'r	"	.52@.53
Carbonate lumps	"	.07¼@.07½
Powdered	"	.08¼@.08½
Muriate, gran., white	"	.06
Lump	"	.08½
Gray	"	.05¾
Nitrate, white, pure (99%)	"	.10¼
Phosphate, com'l	"	.2@.15
Chem. pure	"	.60
Antimony—Glass	"	.30@.40
Needle, lump	"	.05½@.06
Powdered, ordinary	"	.05¼
Best	"	.08½
Oxide, com'l white, 95%	"	.20
Com'l white, 99%	"	.35
Com'l gray	"	.07@.08
Sulphuret, com'l	"	.16
Arsenic—White	"	.04¼@.04¾
Red	"	.07¾@.08½
Asphaltum—		
Ventura, Cal	sh. ton	32.00
Cuban, refined	lb.	.04½
Common	"	.02
Egyptian, refined	"	.06½
Trinidad, refined	"	.01½
San Valentino	lg. ton	16.00
Gilsonite, Utah, ordinary	lb.	.03¼
Select	"	.03¾
Barium—Carbonate, Lump, 80@90%	sh. ton	25.00@27.50
92@98%	"	25.25@29.00
Powdered, 80@90%	lb.	.01¾@02
Chloride, com'l	"	.02¼
Chem. pure cryst	"	.05
Nitrate, powdered	"	.07
Oxide, com'l, hyd. cryst	"	.18@.22
Hydrated, pure cryst.	"	.25
Pure, powd.	"	.27
Sulphate	"	.01@.02¾
Barytes—Crude, No. 1	sh. ton	9.00@10.00
No. 2	"	8.00@8.25
No. 3	"	7.75@8.00
Prime White	"	18.00@20.00
Floated	"	19.00@20.00
Bauxite—Georgia, f.o.b. cars, first grade	lg. ton	5.10
Second grade	"	4.35
Alabama, f. o. b. [illegible] Rock Run	"	3.85
Benzole—[illegible]	gal.	1.00@1.10
Bismuth—Oxide, hydr.	lb	2.25@2.56
Subnitrate cryst	oz.	.09@.10
Bitumen, "B"	lb.	.03½
"A"	"	.05
Bone Ash	"	.02¾@.03½
Borax—Cryst. and pow'd	"	.07¾
Calcined	"	.30
Bromine—Bulk	"	.45
Cadmium—Metallic	"	1.90@2.00
Sulphide	"	1.90@2.25
Sulphate	"	2.00@2.50

	Cust. Meas.	Price.
Calcium—Carbide, in ton lots, f. o. b. Niagara Falls, N.Y.	lb.	.03@.04
Acetate, pure white	100 lbs.	1.00
Gray	"	1.25@1.30
Brown	"	.80@.85
Carbonate, ppt	lb.	.05
Chloride	100 lbs.	.90@1.00
Sulphite	lb.	.05
Cement—		
Portland, Am., 400 lbs.	bbl.	1.50@2.00
Foreign	"	1.75@2.50
"Rosendale," 300 lbs.	"	.90
Sand cement, 400 lbs.	"	1.55@1.95
Slag cement, imported	"	1.65
Ceresine—		
Orange and Yellow	lb.	.10½@.11½
White	"	.11@.13½
Chalk—Lump, bulk	sh. ton	2.15@2.25
Precipitated	lb.	.04@.04½
French	100 lbs.	.30@.35
Chlorine—Liquid	lb.	.30
Water	"	.15
Chrome Ore—		
(50% chrome) ex ship	lg. ton	22.00
Sand	"	35.00
Clay, China—Am. com., ex-dock, N. Y.	sh. ton	7.50
Am. best, ex-dock, N. Y.	"	8.50
English, common	lg. ton	11.00
Best grade	"	17.00
Fire, ground, f.o.b. Jersey City, N. J.	sh. ton	4.00@5.00
Slip Clay	"	6.00
Cobalt—Carbonate	lb.	1.50
Nitrate	"	1.30
Oxide—Black	"	1.76
Gray	"	2.25
Smalt, blue ordinary	"	.14
Best	"	.25
Chem. pure	"	5.00
Copperas	100 lbs.	.60@.62½
Copper—Carbonate	lb.	.18@.20
Chloride	"	.25
Nitrate, crystals	"	.35
Oxide	"	.19@.20
Cream of Tarter—crys.	"	.33½
Granulated	"	.24
Powdered	"	.23½@.24
Cryolite	"	.06½
Explosives—		
Blasting powder, A	"	.10¾
Blasting powder, B	"	.05@.05½
"Rackarock," A	"	.22
"Rackarock," B	"	.18
Judson R.R. powder	"	.10
Dynamite, (40% nitro-glycerine)	"	.15
(50% nitro-glycerine)	"	.17
(60% nitro-glycerine)	"	.19
(75% nitro-glycerine)	"	.23
Glycerine for nitro (32 2-10° Be.)	"	.11@.11¼
Nitro-Benzole	"	.14@.15
Feldspar—Ground	sh. ton	6.50@7.75
Flint—(See Silica).		
Fluorspar—Am. lump	"	6.50@7.00
Gravel	"	6.00
Crushed	"	6.00
Ground	"	10.50@11.00
Foreign, lump	"	8.00@12.00
Ground	"	11.50@14.00
Fuller's Earth—Lump	100 lbs.	.75
Powdered	"	.85
Graphite—(See Plumbago).		
Gypsum—		
Am. gr'd (terra alba)	sh. ton	8.00
Fertilizer	"	7.00
Rock	lg. ton	4.00
English and French	"	14.00@16.00
Infusorial Earth—Ground, American, best	"	20.00
French	"	37.50
German	"	40.00
Iodine—Crude	100 lbs.	2.45
Resublimed	"	2.85
Iron—Chromate	lb.	.03@.10
Muriate	"	.05
Nitrate, com'l	"	.01¼@.01¾
True	"	.04
Oxide	"	.02@.12
Scale	"	.01@.03
Kaolin—(See Clay, China).		
Kryolith—(See Cryolite.)		
Lead—Acetate, white, b'k'n	lb.	.07¼
Com'l, broken	"	.06¼
White, gran	"	.08¼
Nitrate, com'l	"	.06½@.06¾
Chem. pure	"	.35
Lime—Bldg., ab. 250 lbs	bbl.	.65@.75
Finishing	lb.	.75@.80
Magnesite—		
Crude, lump (95%) Greece	lg. ton	7.00
German (85%)	"	12.00
Calcined, 600° C. (Greece)	sh. ton	17.50
1,000° C. (Greece)	"	19.50
3,000° F. (Greece)	lg. ton	30.00
Domestic, soft	sh. ton	12.00@15.00
Bricks, all magnesite	M.	185 00
Magnesite and chrome	"	226.00
Magnesium—		
Metallic, ingots (Ger.)	kg.	5.95@6.90
Powdered (Ger.)	"	6.19
Ribbon or wire (Ger.)	"	10.00
Carbonate	lb.	.10
Chloride, com'l	"	.03¾
Fused	"	.20
Nitrate	"	.60
Manganese—Crude, pow'd 70@75% binoxide	"	.01¼@.01½
75@85% binoxide	"	.01½@.02¼
85@90% binoxide	"	.02¼@.03¼
90@95% binoxide	"	.03¼@.05½
Carbonate	"	.16@.20
Chloride	"	.04
Ore, 50%	unit	.22@.23½
Marble—Flour	sh. ton	5.50@8.00

	Cust. Meas.	Price.
Mercury—Bichloride	lb.	.59@.60
Bisulphate	"	.41
Mica—N. Y. gr'nd, coarse	"	.04@.05
Fine	"	.06@.08
Sheets, 1½x3 in	"	.60
8x10 in	"	13.00
Mineral Wool—F. o. b. Stanhope, N. J.:		
Slag, ordinary	100 lbs.	1.00
Selected	"	1.67
Extra	"	4.00
Rock, ordinary	sh. ton	37.00
Selected	100 lbs.	4.00
Extra	"	7.00
Monazite—92%	sh. ton	140.00
Nickel—Oxide, bl'k No. 1	lb.	1.00
Black No. 2	"	.60
Green, No. 1	"	1.00
No. 2	"	.60
Oils—		
Black, reduced 29 gr.:		
25@30 cold test	gal.	.07@.07½
15	"	.08@.08½
Zero	"	.11@12
Summer	"	.06½@.07
Smith's Ferry, 33@34 gr.	"	.07½@.08½
West Virginia, 29 gr.	"	.22@.24
Cylinder, dark steam ref	"	.08@.13
Dark filtered	"	.11@.16
Light filtered	"	.13@.15½
Extra cold test	"	.21@.25
Gasolene, 86° @88°	"	.14@.16
90°	"	.19@.20
Neutral filtered, lemon, 33@34 gr.	"	.13@.18½
White, 33@34 gr.	"	.21@.23
Wool grade, 32 gr.	"	.11@.14
Naphtha, crude, 68@72°	"	.10
Deodorized	"	.10½
Paraffine, high viscosity	"	.20@.25
903-907 sp. gr	"	.09¼@.09½
903 sp. gr	"	.08¼@.08½
883 "	"	.07½@.07¾
865@875 sp. gr.	"	.07¼@.07½
Red No. 1	"	.08¾@.09¼
No. 2	"	.08¼@.08¾
Linseed, domestic raw	"	.36@.39
Boiled	"	41@.42
Calcutta, raw	"	.54
Graphite, lubricating, Am. dry	lb.	.10
In oil	"	.12
Axle grease	"	.08¼@.10
Wood grease	"	.05@.06
Ozokerite—Foreign	"	.06@.08
Paints and Colors—		
Benzine, Sumatra	"	.35@.40
Marbled	"	.27@.28
Chrome green, common	"	.05@.06
Extra	"	.12@.15
Chem. pure	"	.20@.30
Super	"	.10@.12
Yellow, common	"	.10
Best	"	.25
Silica Graphite, thick	"	.12
Thinned	gal.	1.15
Lampblack—Com'l	lb.	.03@.05
Refined	"	.08@.10
Calcined	"	.12@.20
Fine spirit	"	.20@.35
Litharge, Am. powd.	"	.05½@.05¾
English flake	"	.07¾@.08
Metallic, brown	sh. ton	16.00@20.00
Red	"	16.00@20.00
Ocher, Am. common	"	9.25@10.00
Best	"	21.25@25.00
Dutch, washed	lb.	.04¼@.05
French, washed	"	.01¼@.02½
Orange mineral, Am.	"	.07¾@.08¼
Foreign, as to make	"	.08¼@.11
Paris green, pure	"	.12@.14
Red lead, American	"	.05¼@.05¾
Foreign	"	.07½@.08
Shellac, "D. C."	"	.27@.30
Native	"	.17@.18
Turpentine, spirits	gal.	.44½@.45
Ultramarine, best	lb.	.25
Vermilion, Amer. lead	"	.14@.16
Quicksilver, bulk	"	.61
Chinese	"	.80@.90
English, imported	"	.65
Artificial	"	.10@.20
White lead, Am., dry	"	.05@.05½
In oil	"	.05½@.06½
English, in oil	"	.07½@.08¼
Whiting, common	100 lbs.	.40½
Gilders	"	.47
Zinc white, Am., ex. dry	lb.	.04¾@.05¼
American, red seal	"	.07½@.08
Green seal	"	.08@.08½
Foreign, red seal, dry	"	.07@.08½
Green seal, dry	"	.07½@.09½
Foreign, red seal, in oil	"	.10½@.11¼
Green seal, in oil	"	.11¾@.12½
Plumbago—Am., pulv., f.o.b., Providence, R. I.	sh. ton	30.00
Lump	"	8.00
German, lump	100 lbs.	1.50@2.00
Pulverized	"	2.25
Ceylon, pulv. common	lb	.03½
Best	"	.05@.08
Italian, pulv.	"	.01¼
Potash—Caustic	"	.04@.05
Potassium—		
Metallic, in balls (Ger.)	kg.	17.85
Bicarbonate cryst	lb.	.08½
Powdered or gran	"	.12
Bichromate	"	.09¾
Bromide	"	.46
Carbonate	"	.02¾@.03½
Chromate	"	.35
Cyanide (98@99%)	"	.28@.30
Permanganate, pure cr.	"	.14@.15
Silicate	"	.06
Prussiate, yellow	"	.16½@.17½
Red	"	.37@.40

	Cust. Meas.	Price.
Potassium—		
Sulphide, com'l	lb.	.10
Quartz—(See Silica).		
Rosin—Common	bbl.	1.30
Best	"	2.65
Salt—N.Y. com. fine abt. 280 lbs	bbl.	.70
N. Y. agricultural	sh. ton	1.50
N. Y. coarse	"	2.30
N. Y. dairy and table	"	2.90
Saltpeter—Crude	100 lbs.	3.80@3.85
Refined	"	4.25@5.50
Silica—		
Ground quartz, ord.	sh. ton	6.00@8.00
Best	"	12.00
Lump quartz	"	2.50@4.00
Fire bricks (Blue Welch)	M.	35.00
Silver—Chloride	oz.	.65
Nitrate	"	.41@.42½
Oxide	"	.85@1.10
Sodium—Metallic	lb.	.75
Acetate, com'l	"	.03½
Bichromate	"	.07¾
Bisulphite, com'l	"	.01½
Bromide	"	.49@.50
Chlorate, com'l	"	.09¾@.10
Hyposulphite	100 lbs.	1.60@1.70
Nitrite	lb.	.07¼@.07¾
Peroxide	"	.45
Phosphate	"	.03
Triphosphate	"	.04
Silicate, conc	"	.01@.01½
Sulphate, gran., puri'd	"	.03
Sulphide	100 lbs.	1.75
Sulphite	lb.	.02½
Tungstate, com'l	"	.35
Pure	"	.50
Strontium—Nitrate	"	.09@.10
Sulphur—Roll	100 lbs.	1.70
Flour	"	1.80@1.85
Flowers, sublimed	"	2.00
Talc—N. C No. 1	sh. ton	15.00@15.50
No. 2	"	10.00@12.00
N. Y., Fibrous	"	8.00@9.00
French, best	"	20.00
Italian,	"	20.00@30.00
Tar—Coal	bbl.	3.00
Tin—Chloride	lb.	.11@.13
Crystals	"	.22@.23
Muriate	"	.06
Oxide, white, ch. pure	"	.36@.40
Uranium—Oxide	"	1.80@2.00
Zinc—Metallic, ch. pure	"	.09@.10
Carbonate	"	.15
Chloride	"	.06@.08
Dust	"	.07@.07¼
Sulphate	"	.02½

THE RARE ELEMENTS.

Prices given are at makers' works in Germany, unless otherwise noted.

	Cust. Meas.	Price.
Barium—Amalgam	grm.	$1.19
Electrol	"	5 71
Beryllium—Powder	"	5.95
Crystals	"	9.04
Nitrate (N Y.)	oz.	2.50
Boron—Amorphous, pure	grm	.19
Crystals, pure	"	1.43
Nitrate (N. Y.)	lb.	1.50
Calcium—Electrol	"	4.28
Cerium—Fused	grm.	2.02
Nitrate (N. Y.)	lb.	21.00
Chromium—Fused	kg.	5.95
Pure powder 95%	"	1.79
Chem. pure cryst	grm.	.21
Cobalt—(98@99%)	kg.	5.35@5.71
Pure	"	30.94
Didymium—Powder	grm.	3.81
Nitrate (N. Y.)	oz.	4.00
Erbium	grm.	3.09
Nitrate (N. Y.)	oz.	3.00
Gallium	grain	9.52
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	5.95
Crystals	"	9.04
Nitrate (N. Y.)	oz.	2.50
Indium	grm	4.05
Iridium	"	2.38
Lanthanum—Powder	"	4.28
Electrol, in balls	"	9.04
Nitrate (N. Y.)	oz.	3.50
Lithium	grm.	2.38
Nitrate (N. Y.)	oz.	.60
Molybdenum—Powder	kg.	2.62
Fused, electrol 95%	100 grms.	15.47
Niobium	grm.	3.81
Osmium	"	.95
Palladium	"	.95
Rhodium	"	2.87
Rubidium—Pure	"	4.76
Ruthenium—Pure powd	"	2.38
Selenium—Com'l powder	kg	30.94
Sublimed powder	"	40.46
Sticks	"	33.32
Silicium—Amorphous	100 grms.	2.87
Crystals, pure	"	5.95
Strontium—Electrol	grm.	6.19
Tantalium—Pure	"	3.57
Tellurium—Ch. p. sticks	100 grms.	11.90
Powder	"	9.52
Thallium	kg.	26.80
Thorium—Metallic	grm.	7.85
Nitrate 49@50% (N. Y.)	lb.	5.00@5.50
Titanium	grm.	.71
Uranium	"	.48
Nitrate (N. Y.)	oz.	.25
Vanadium—Fused	grm.	1.19
Wolfram—Fused	100 grms.	23.80
Powder, 95@98%	kg.	1.90
Chem. pure	"	6.42
Yttrium	grm.	3.33
Nitrate (N. Y.)	oz.	4.00
Zirconium—Com'l	kg.	119.00
Pure	grm.	.71
Nitrate (N. Y.)	oz.	1.00

NOTE.—These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts. This table is revised up to June 16th. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Review of Chemicals and Minerals.